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ENVIRONMENTAL QUALITY

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18 August 1982

WORLDWIDE REPORT ENVIRONMENTAL QUALITY

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CONTENTS

ASIA

AUSTRALIA

Smelter Implicated in High Lead Levels Found in Children (THE SYDNEY MORNING HERALD, 16 Jun 82)	1
Study Finds Sydney Rain as Acidic as Lemon Juice (Richard Eckersley; THE SYDNEY MORNING HERALD, 12 Jun 82)	2
Chemical Plant Given Time To Control Effluent Discharge (THE WEST AUSTRALIAN, 14 Jun 82)	3
Victorian Government in Row Over Extension of Pollution Nod (THE AGE, 17 Jun 82)	4

BANGLADESH

Necessity of Forestry, Other Projects Told (Editorial; THE BANGLADESH TIMES, 12 Jul 82)	5
--------------------------------------------------------------------------------------------------	---

INDIA

National Water Development Agency Established (PATRIOT, 26 Jul 82)	7
Minister Speaks at Ganges Flood Control Meeting (THE STATESMAN, 16 Jul 82)	8
Briefs Soil Conservation Plans	9

NEW ZEALAND

Environmentalists Oppose Amoco Prospecting Licenses (THE NEW ZEALAND HERALD, various dates)	10
Planning Tribunal Hearing Regional Resources Study Water, Soil Impacts	
Moratorium Bars Exploitation of 11 Geothermal Fields (THE NEW ZEALAND HERALD, various dates)	13
Temporary Protection Given National Authority Sought	

PHILIPPINES

Cement Plant Ordered Closed for Pollution (BULLETIN TODAY, 28 Jul 82)	15
--------------------------------------------------------------------------------	----

SRI LANKA

Briefs Flow of Effluents Cause Alarm	16
-----------------------------------------	----

THAILAND

Economic Development Has Greatly Harmed Environment (Suchin Preecha; BUSINESS TIMES, 24 Jun 82)	17
----------------------------------------------------------------------------------------------------------	----

LATIN AMERICA

BERMUDA

Land Use Restrictions Gain in Senate; Project Fought (THE ROYAL GAZETTE, various dates)	18
Law To Ban Development Apartment Project Battle	

ECUADOR

Air Pollution, Occupational Hazards Cause Concern (Marco Mendoza; EL COMERCIO, 12 Jul 82)	20
----------------------------------------------------------------------------------------------------	----

JAMAICA

Chemical Leak Contaminates Kingston Water Supply (THE DAILY GLEANER, 14 Jul 82)	22
------------------------------------------------------------------------------------------	----

SUB-SAHARAN AFRICA

TANZANIA

Minister Outlines Measures To Prevent Environmental Pollution (Mkumbwa Ally; DAILY NEWS, 19 Jul 82)	25
--------------------------------------------------------------------------------------------------------------	----

ZIMBABWE

Briefs	
Villagers Steal Water	26
Drought Increases Poaching	26

WEST EUROPE

AUSTRIA

Air Pollution Worse Than Law Allows (Josef Votzi; PROFIL, 19 Jul 82)	27
-------------------------------------------------------------------------------	----

FINLAND

Large Quantity of PCB Dumped Illegally in Archipelago Seas (HUFVUDSTADSBLADET, various dates)	32
Was Supposed To Be Shipped to GDR	
Police Search for Ship Owner, by Staffan Bruun	
Chemical Factory Spokesman Comments, by Staffan Bruun	
Paper Urges Devising New Hazardous Waste Rules (Editorial; HELSINGIN SANOMAT, 8 Jul 82)	38
Work Starting on Country's Hazardous Waste Processing Facility (HELSINGIN SANOMAT, 29 Jun 82)	40
Communist Organ Charges Laws Inadequate on Air Pollution (Oili Alm; KANSAN UUTISET, 1 Jul 82)	42
Aerial Spraying of Forests Resumes After Two Year Suspension (Jyrki Iivonen; HELSINGIN SANOMAT, 22 Jun 82)	46
Counties Ask Central Government To Halt Aerial Spraying (UUSI SUOMI, 30 Jun 82)	49
Forest, Lumber Industries Halting Aerial Spraying (HELSINGIN SANOMAT, 9 Jul 82)	51
Report Urges Submitting All Chemicals To Test Before Use (HELSINGIN SANOMAT, 2 Jul 82)	53

Study of Air Pollution During 1970's Analyzes 'Acid Rain'	57
(HUFVUDSTADSBLADET, 5 Jun 82)	
Lead, Other Pollutants Exceed Normal Range in Helsinki	58
(HELSINGIN SANOMAT, 17 Jun 82)	
Paper Urges Law To Control Lead From Exhausts	60
(Editorial; HELSINGIN SANOMAT, 19 Jun 82)	
GREECE	
Serious Pollution in Saronikos Gulf	62
(ELEVETHEROTYPIA, 21 Jun 82)	
Anti-Pollution Measures in Northern Greece	66
(RIZOSPASTIS, 20 Jun 82)	
Briefs	
Kavala Firm Fined	67
Elevisis Firm Fined	67
Oil Rig Pollution	67
Petroleum Pollution	67
NORWAY	
Fjords Being Subjected To Increasing Pollution	68
(Heide Egede-Nissen; KLASSEKAMPEN, 13 Jul 82)	
Liberal Party Chief Attacks Government Pollution Effort	71
(Odd Einar Dorum; DAGBLADET, 14 Jul 82)	
SWEDEN	
Salt From Wells Seen Posing Threat to Archipelago Waters	73
(Margareta Sandstrom; SVENSKA DAGBLADET, 26 May 82)	

SMELTER IMPLICATED IN HIGH LEAD LEVELS FOUND IN CHILDREN

Sydney THE SYDNEY MORNING HERALD in English 16 Jun 82 p 1

[Text]

PORT. PIRIE. — Fifty-seven of a group of 87 children tested for blood lead levels in Port Pirie were found to be over the level of concern of 30 micrograms per 100 millilitres set by the National Health and Medical Research Council.

The 87 children were subjected to more extensive tests after blood lead tests of 1,300 children in Port Pirie West and Solomontown in May found they were over the level of concern.

The Mayor of Port Pirie, Mr Bill Jones, announced the results of the tests yesterday.

Mr Jones is also the chairman of the local Board of Health and the corporate affairs manager of Broken Hill Associated Smelters, which operates the world's biggest lead smelter in the city.

The tests were carried out by the company's laboratory because the South Australian health authorities believed it was the only one available with the expertise to do the job properly.

Mr Jones denied suggestions yesterday that the smelter's involvement in conducting the tests

had damaged the survey's credibility or that the positions he held created a conflict of interest.

"Every effort is being made to overcome the problem created by the lead levels and I stress there is no need for alarm among the parents of the children involved," he said.

When Mr Jones earlier announced that the children would be recalled for further testing he assured parents the highest level found among the tested children was 54 micrograms.

He said hospital treatment was not required until a level of 60 micrograms was reached.

The manager of Broken Hill Associated Smelters, Mr Denby Ward, said the company would not enter into negotiations over compensation with parents whose families had been affected by lead.

He said he was not officially aware of such families and any who did exist would have to take legal action if they wanted compensation.

An indemnity clause in the testing consent forms which had been criticised by parents protected the company only from action arising out of the testing procedure and

not civil action over alleged lead poisoning.

No such civil action had been entered, Mr Ward said.

Asked whether the company should pay expenses incurred by families who had left the town, or run up large medical or renovation bills because of lead, Mr

Ward said he believed the company already had paid.

"We've spent 38 million dollars over the past ten years trying to lower lead emissions — the problem is not new emissions but old lead deposits being dug up," he said.

Of the 57 children identified, 37 were in the 30-35mg range, 13 in the 35.5-40mg range, six in the 40.5 to 45 range, none between 45.5 and 50 and one above 50mg per 100ml of blood.

Parents later vehemently criticised the program.

One parent, Mrs Debbie Devlin, said the smelter's involvement in taking and analysing the initial tests had made a farce of the survey.

Academics in the United Kingdom have described the 30mg safety mark as "ridiculously high," and contend that 15mg is a more realistic level.

STUDY FINDS SYDNEY RAIN AS ACIDIC AS LEMON JUICE

Sydney THE SYDNEY MORNING HERALD in English 12 Jun 82 p 3

[Article by Richard Eckersley]

[Text]

It rains acid in Sydney in summer, a CSIRO study has found. One rainfall sample collected was as acidic as lemon juice.

Acid rain is caused by the presence of mainly sulphuric and nitric acids produced by emissions of sulphur dioxide from power stations and industries, and nitrogen oxides from vehicle exhausts.

It is causing growing concern in Europe and North America where it has been linked to the disappearance of fish in lakes, the destruction of large areas of forests, and the leaching of toxic heavy metals such as cadmium into ground water.

However, there has been hardly any interest in acid rain in Australia because it was generally considered that urban and industrial areas were too dispersed to pose problems.

Dir Greg Ayers and Mr Rob Gillett, of the CSIRO Division of Cloud Physics, who carried out the Sydney research were surprised at the degree of acidity found. The environmental consequences remain unclear.

Mr Gillett said yesterday that much the same level of acidity was found as far west as the Blue Mountains.

In their study, the researchers monitored rainfall in the summer of 1980-81 at 12 sites in or near Sydney, collecting 294 samples.

The collection sites were Annandale, Five Dock, Greenacre, Loftus, Brookvale, Epping, Berowra Heights, Hornsby Heights, Carling-

ford, Castle Hill, Springwood and Warrimoo.

The most acidic rain was recorded at Epping (average pH 4.25) and the least at Loftus (pH 5.08).

The mean pH — a measure of acidity — was 4.44. The lowest pH recorded was 3.6 about as acidic as lemon juice.

Pure water has a pH of 7. Pure water in contact with atmospheric carbon dioxide has a pH of about 5.6.

The study found 93 per cent of the rainwater collected had a pH below 5.6, and could thus be labelled acid rain, the researchers say.

Less extensive sampling showed a slightly higher pH in the summer of 1981-82. pH increased in autumn and spring and fell again in winter, although not as far as in summer.

Mr Gillett said the acid rain could increase corrosion of paint or masonry.

He thought it was unlikely that the rain would affect fish and vegetation in the Sydney region. It was less acidic than in the worst affected areas of the northern hemisphere and would, in any case, be neutralised by Sydney's alkaline soils.

However, it was possible acid rain could be a factor in the still unexplained disease of eucalyptus called die-back in the New England region, he said.

Soils there were acidic, and this would be increased by acid rain, Mr Gillett said. The

CHEMICAL PLANT GIVEN TIME TO CONTROL EFFLUENT DISCHARGE

Perth THE WEST AUSTRALIAN in English 14 Jun 82 p 3

[Text]

A KWINANA chemical plant has been given six months to develop a satisfactory method of effluent disposal and a further six months to have it fully implemented.

The Minister for Water Resources, Mr Mensaros, has given Chemical Industries (Kwinana) Pty Ltd 30 days to cease its practice of discharging liquid waste into an open pit.

The company produced insecticides and herbicides containing the chemicals 24D and 245T. Mr Mensaros said during the weekend that the company had recently installed a treatment plant which had improved the standard of effluent.

However, the waste had still failed to meet licencing conditions.

The interdepartmental effluent licencing advisory panel had proposed alternative methods of waste disposal which would be "environmentally satisfactory."

Mr Mensaros said that the company had been told to have qualified consultants draw up a detailed proposal for effluent disposal to satisfy the panel within six months.

An approved scheme would have to be implemented within 12 months.

In the meantime the company had been instructed to separate its process effluent from cooling water and inject it through a bore into the lower layer of the unusable salt-water aquifer.

Produced

The effluent is produced at a rate of about 10 cubic metres daily and would be dense enough to stay at the bottom of the aquifer.

The chemicals were biodegradable and would cause no environmental damage, Mr Mensaros said.

A spokesman for the Public Interest Research Group in Herbicides, Mr Bob Howard,

described Mr Mensaros's action as "too little, too late."

The group, mainly made up of environmental students attending Murdoch University, is concerned about chemical contamination in the Cockburn Sound area.

Mr Howard said that State water authorities had failed to carry out proper studies of the extent of soil and water contamination by dioxin, a by-product of the manufacturer of 245T.

He described dioxin as a "super poison."

Sea

The waste injected into the aquifer would eventually find its way to the sea, he said.

The water in the aquifer had been calculated to move about a kilometre every six years and the company's plant was 2km from the coast.

The State Government had failed to act until it was pressured into doing so by the recent release of the three-year-old Layton inquiry report on Cockburn Sound ground-water contamination, he said.

The problem had been compounded by the Government's delay in legislating to control the level of dioxin in herbicides till January this year—six years after other Australian States.

A company official declined yesterday to comment on Mr Mensaros's action.

VICTORIAN GOVERNMENT IN ROW OVER EXTENSION OF POLLUTION NOD

Melbourne THE AGE in English 17 Jun 82 p 5

[Text]

The Victorian Government will allow the SEC's Hazelwood power station to emit higher pollution levels for another four months in an attempt to ensure uninterrupted winter power supplies.

The special licence conditions, which will operate until 31 October, will allow increased emission of solid particles from the plant's coal-fired chimneys.

The Minister for Minerals and Energy, Mr White, and the Minister for Conservation, Mr Walker, issued a joint statement yesterday approving the extended licence subject to several controls. These include submission of detailed plans to rebuild pollution control equipment at Hazelwood and an early application by the SEC for its Loy Yang licence.

The SEC chairman, Mr Trethowan, has said previously that, pending Government approval of the extended emissions licence, the SEC will formally apply to the Environment Protection Authority for a further two-year relaxation of licence conditions.

Mr White and Mr Walker said

yesterday that an application for a two-year extension of the special licence variation would be heard publicly under normal EPA appeals procedures.

The Government claims the 31 October extension of the licence variation is necessary to maintain uninterrupted power supplies during winter.

Emission limits were relaxed at Hazelwood earlier this year to enable the SEC to help meet an urgent demand for electricity supplies in New South Wales.

A member of Morwell Council, Councillor Keith Hamilton,

said yesterday the Government had given no real reasons for its approval of the eased emission licence.

Council, councillor Keith Hamilton,

"The people of the Latrobe Valley are bitterly disappointed that a Labor Government would do this to them. This has always been a strong Labor area, and in that light, the Government's decision to allow further pollution by the SEC is totally unacceptable," he said.

Councillor Hamilton, a senior lecturer in applied science at the

Gippsland Institute of Advanced Education, said pollution from SEC chimney stacks had caused severe health problems, including eye and lung irritations, among Latrobe Valley residents.

Under the eased emission conditions, dust concentration limits from individual chimneys have been increased from 0.5 to 0.6 grams per cubic metre. However, although the licence permits higher individual emissions, the total mass emission from the station will not change.

The acting chairman of the EPA, Mr John Alder, said the authority had approved the extended licence subject to a programme of pollution abatement works at the station. This involved the rebuilding and refurbishing of precipitators on eight power generating units, he said.

Mr Alder said the SEC had lodged an application with the Latrobe Valley Water and Sewerage Board for an amendment to its licence, seeking higher levels of emission.

Hazelwood power station supplies 5 per cent of the average daily generation of Victoria's electricity.

CSO: 5000/7556

NECESSITY OF FORESTRY, OTHER PROJECTS TOLD

Dacca THE BANGLADESH TIMES in English 12 Jul 82 p 5

[Editorial]

[Text]

Taking up massive afforestation and other schemes promising favourable impact on maintaining the ecological balance are a dire necessity for the northern region of the country. The area is hard hit by widespread drying up of rivers and the lowering of surface and subterranean water levels. The ecological balance of a large segment of the northern region has been at stake for a long time now due to the operation of the Farakka barrage beyond the country's borders. The large scale formation of 'char' lands has been devouring the once-mighty Padma and other rivers jeopardising the life and living of millions of people as well as navigation in the region. At certain places the rivers are becoming the memories of the past confirming the worst apprehension of experts that the whole of the northern region may turn into deserts in not too distant a future unless ecological problems are attended to immediately. The vast chars of the Padma already give looks of barren deserts and the urgency of the issue needs no highlighting.

The recent report that the government has initiated a massive afforestation plan for the northern region in this connection is refreshing. The total cost of the programme, according to the report, is Taka 30.69 crore and part of which will be given by the Asian Development Bank and the United Nations Development Programme. Under the plan fast growing trees would be planted throughout the region. In this context the forest department is also trying to organise some kind of local level initiatives to plant tree saplings on a large scale in the villages.

The programmes and initiatives taken by the government for tackling a problem of such a serious magnitude in the northern region may have their limitations because of resource constraints and other factors. Besides without full participation of the people only official plans in any case will not be sufficient to check the spread of desertification and the associated problem and sufferings of the people of the affected areas. To start with the people must be made aware of the danger they are faced with and the possible ways and means to counter it. Well-organised and motivated people can work wonders and in various other sectors our rural people have also proved that if organised properly and given the leadership they come forward with great enthusiasm. The local level initiative is also essential because of the nature of our official apparatus which can hardly reach the villages. Hence involving the people in the afforestation programme of the northern region is a good beginning the forest department has been trying to make.

CSO: 5000/7080

NATIONAL WATER DEVELOPMENT AGENCY ESTABLISHED

New Delhi PATRIOT in English 26 Jul 82 p 8

[Text] A National Water Department Agency has been set up under the chairmanship of Union Irrigation Minister Kedar Panday to undertake surveys and investigations for the development of peninsular rivers, reports UNI.

The constitution of the agency under the Societies Registration Act marks the first step towards implementing the massive Rs 50,000 crore national perspective for water resources development which envisages among other things transfer of surplus waters from one river basin to another to meet the needs of deficit areas.

Union Minister of State for Irrigation Z.R. Ansari is the vice president of the agency, while the Chief Ministers and Irrigation Ministers of Andhra Pradesh Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu, Uttar Pradesh, Kerala, Goa, Daman and Diu and Pondicherry are its members, besides concerned Central Ministers. Mr J.I. Gianchandani, former chief engineer in Rajasthan Government is the director-general of the agency. He will also act as the member-secretary.

The functions of the agency are to promote scientific development for optimum utilisation of water resources in the peninsular rivers, carry out detailed surveys and investigations of the possible storage reservoir sites and inter-connecting links in close cooperation with the State governments and to prepare feasibility reports of various components of the scheme.

The investigations and planning work is expected to be completed in seven to 10 years at an estimated cost of about Rs. 107 crores.

Peninsular rivers development is part of the national perspective plan which also envisages Himalayan rivers development to be taken up later. The two components of the plan together envisage irrigation of an additional area of 25 million hectares by surface flows, 10 million hectares by increased use of ground water and generation of about 40 million KW of power besides benefits of flood control and navigation. The entire scheme will enable the ultimate irrigation potential of the country to be increased from 113 million hectares to 148 million hectares.

CSO: 5000/7081

MINISTER SPEAKS AT GANGES FLOOD CONTROL MEETING

Calcutta THE STATESMAN in English 16 Jul 82 p 16

[Text]

SEVERE erosion on the right bank of the Ganga, over a stretch of 94-km downstream of Farakka has been resulting in a loss of Indian territory and a consequent gain by Bangladesh, according to Mr Ram Narayan Goswami, Minister of State for Irrigation. Between 1931 and 1978, India had lost 25,000 hectares of land to the neighbouring country because of erosion and soon after the 1978 floods, 2,400 hectares were lost, the Minister said on Thursday.

Mr Goswami, who represented the Chief Minister at a meeting of the Ganga Flood Control Commission on July 6, said that although this was the most important thing in the West Bengal agenda at the meeting, the Commission took no cognizance of the rapid erosion near Farakka. It felt that tackling the erosion was a State matter.

The Commission on the other hand suggested to the State Government that it come up with a recast project to save the vulnerable spots of the erosion. Mr Goswami said that at many points the Ganga waters had come very close to the railway tracks and the National Highway. The recast project, which will cost Rs 19 crores, includes repair work in these areas. The State Government had earlier asked for Rs 198 crores to check the erosion on the 94-km stretch on the basis of the Preetam Singh Committee report in 1980. Mr Goswami reiterated that the erosion was so severe that the Ganga was likely to meet the Feeder canal of the Bhagirathi river soon. He felt that the very purpose of the Farakka barrage would be lost if it was not checked.

The West Bengal Government's view that irregular discharge from the Farakka barrage was largely

responsible for the erosion was rejected by the Commission which felt that erosion in the area had started much before the barrage was constructed. Mr Goswami said that the Ganga flowed on two channels downstream of Farakka. Irregular discharge of water from the barrage had caused silting of the left channel forcing the water in an increasing quantity through the right channel resulting in large scale erosion.

The Commission had sent its observation on the erosion to the State Government which was sent back with necessary replies, Mr Goswami added. He was assured at the meeting that the recast project would be approved. The Minister requested the chairman of the Commission to visit West Bengal by the end of July to see the erosion for himself.

PTI adds from Gauhati: Nearly 300 families at Parangania and Joganlar villages in Golaghat subdivision are threatened by the severe erosion of the Brahmaputra at Mariabola even as the water level has been receding during the past few days.

According to official reports, erosion continuing at an alarming rate, has also endangered an embankment. Elsewhere in the Kowarpur area of Sibsagar subdivision, erosion by Dikhow river continues unabated.

An official Press Note, however, said here that no alarming report on the flood situation was received from any sub-division today.

The Central Flood Forecasting Division here said the Brahmaputra, still flowing above the danger level at Dibrugarh, might rise between Gauhati and Dhubri during the next 12 hours. Among its other tributaries, the Subansiri is flowing above danger level at Bandatighat steadily.

CSO: 5000/7078

BRIEFS

SOIL CONSERVATION PLANS--A RS. 2.8-crore pilot project for soil conservation in the catchment areas of the Keleghal and Mayurakshi rivers has been prepared. It will be implemented with assistance from the European Economic Community. The catchment areas of both rivers are located in the undulating lateritic tract of Midnapore and Birbhum districts. The ecological balance has been threatened, particularly in the upper catchment region where extensive denudation, heavy incidence of cattle grazing and improper land use have assumed alarming proportions, according to informed sources. Severe erosion, the siltation to rivers and frequent floods have become regular features in these areas. The project proposes to introduce intensive soil conservation measures, including ground water recharging, contour trenching and afforestation. The main objective of the project is to rehabilitate these two important river catchments in the shortest possible time. According to the sources, about 1.7 million hectares are now exposed to land degradation. Soil erosion, to a large extent, is due to the pressure of the population on the land. This has been further aggravated by uncontrolled fire in the forest and unauthorized and unregulated felling of trees. [Text] [Calcutta THE STATESMAN in English 17 Jul 82 p 12]

CSO: 5000/7079

ENVIRONMENTALISTS OPPOSE AMOCO PROSPECTING LICENSES

Planning Tribunal Hearing

Auckland THE NEW ZEALAND HERALD in English 1 Jul 82 p 2

[Text]

A test hearing of mineral-prospecting licence applications opened before the Planning Tribunal in Thames yesterday with a renewed challenge to the admissibility of evidence relating to mining operations.

Amoco Minerals (NZ) Ltd has applied for two prospecting licences over coastal blocks near the Coromandel beach resorts of Whangamata and Pauanui.

The hearing is being closely monitored by both the mining industry and the environmental lobby, because the applications are the first to be dealt with under recently amended mining legislation.

Opposition, led by the Environmental Defence Society, is mainly focused on prospecting plans for 1090 hectares at Opoutere. The plans have attracted more than 50 objections.

Head Off

Only two formal objections were lodged against the second application, for 1130 hectares at Onemana.

The counsel for Amoco, Mr G. P. Curry, opened the company's case by trying to head off any evidence about the likely impact of mining operations.

He said that because the Mining Amendment Act 1981 had removed the automatic right of a prospector to exchange a prospecting right for a mining licence, a decision of the High Court last year on the admissibility of evidence of mining impact no longer applied.

"Any evidence of mining operations at this stage would be highly speculative, since it is impossible to predict the nature and scope of any mining operations," Mr Curry said.

But with objectors' evidence yet to be heard, the chairman of the Planning Tribunal, Judge A. R. Turner, declined an application to rule on the matter.

Under the new legislation, it is up to the tribunal to propose to the Minister of Energy what conditions should be attached to prospecting licences.

Amoco and the Hauraki Catchment Board submitted their own proposed conditions, but Judge Turner told their representatives to work out the points of conflict with the Crown Law Office and report back to the tribunal tomorrow.

The company has not applied for a water right because it says it is pioneering a new drilling technique

which does not require water.

But the catchment board said it would still need to inspect prospecting operations and asked that mining companies be required to foot the bill.

The New Zealand director of Amoco, Mr Peter Roberts, said his company was planning limited-impact prospecting which would be followed by full environmental restoration.

Coastal Strip

Later, during cross-examination by the Environmental Defence Society counsel, Miss Sian Elias, he said the company would not be prepared to exclude a coastal strip and headlands from the Opoutere application.

He said Amoco had no plans to drill on the beach, but any policy of "locking up" zones under a resource management plan would be "fraught with danger" because of the unknown value of possible mineral deposits.

Among witnesses due to appear today is the Commissioner for the Environment, Mr K. W. Piddington, who has been subpoenaed by the Environmental Defence Society.

Regional Resources Study

Auckland THE NEW ZEALAND HERALD in English 2 Jul 82 p 2

[Excerpts]

Thames

Calls for an urgent regional resources study to pinpoint mining exclusion zones for the Coromandel Peninsula came from several quarters at a Planning Tribunal hearing in Thames yesterday.

But they encountered a sceptical response from the tribunal chairman, Judge A. R. Turner, who said local residents had only themselves to blame for the lack of such a study.

"The problem is the community seems very reluctant to set up an organisational structure to do this," he said in an apparent reference to delays in setting up a Thames Valley United Council.

"In the absence of such a study, this tribunal has to stumble along and do the best it can."

Among advocates of a regional resources study yesterday was the Commissioner for the Environment, Mr K. W. Piddington, who had been subpoenaed to appear by the Environmental Defence Society.

Mr Piddington said the

Coromandel Peninsula was a region of ecological importance and physical instability.

He said a study of the peninsula's natural resources would allow identification of areas where mining would be harmful and conversely where it would be manageable.

Amoco says it plans to carry out limited impact prospecting only.

But the commissioner said he was concerned that with a large concentration of mining privileges in the Coromandel, there could be cumulative effects unforeseen by a consideration of each application in isolation.

The general manager of the Thames Coromandel District Council, Mr B. H. de Boer, said that although his council was not opposed to mining as such, there was an

urgent need to pinpoint areas where it should not be allowed.

Miss Sian Elias, counsel for the Environmental Defence Society, which is acting for most of the objectors, submitted that the tribunal's inquiry should not be limited to the impact of a prospecting licence.

The new legislation allowed it to have regard to the mining that might be the end result, she said.

Her submission follows a move by Amoco at the start of the hearing to have all evidence relating to mining operations declared inadmissible.

Judge Turner has so far resisted making a ruling saying: "We will deal with that problem when we come to it."

Water, Soil Impacts

Auckland THE NEW ZEALAND HERALD in English 3 Jul 82 p 2

[Text]

A legal tussle, over whether catchment authorities or the mines division should have policing powers under new mining legislation, marked the conclusion of a three-day Planning Tribunal sitting in Thames yesterday.

The Hauraki Catchment Board — backed by the Environmental Defence Society and the Thames-Coromandel District Council — argued that it should be the agency to administer proposed prospecting-licence conditions relating to water and soil impacts.

But Amoco Minerals (NZ) Ltd, whose prospecting-licence applications for blocks at Opoutere and One-mana on the east coast of the Coromandel Peninsula were the first to be heard under the Mining Amendment Act 1981, maintained the Inspector of Mines was the appropriate officer for the job.

Limited Impact

The company's position on this was supported yesterday by counsel for the Minister of Energy, Mr Birch, who had referred Amoco's applications to the Planning Tribunal in the first place.

It is now up to the tribunal, having heard evidence on behalf of Amoco and of 48 objectors, to report to the minister on whether or not the applications should be granted and, if so, what conditions should be attached.

The company, which proposed confining itself to "limited-impact" prospecting on the two blocks, prescribed its own conditions which were matched by another set, jointly worked out by the Environmental Defence Society, acting for most of the objectors, the catchment board and the district council.

Vexed Question

The two sets of conditions struck common ground on many points such as wildlife-protection measures and limitations on the number and size of drilling sites.

But the matter of the catchment board's involve-

ment became a vexed question.

The board's counsel, Mr P. H. Cooney, said mining activities affected water and soil values in many ways which, unless they involved the actual taking or discharging of natural waters, fell outside the scope of the Water and Soil Conservation Act.

Only Agency

Examples would be the build-up of stream sludge and erosion caused by track construction, he said.

Mr Cooney submitted that the board, because of its expertise in the field, should be the only agency to control water and soil-related conditions.

But Amoco's leading counsel, Mr G. P. Curry, said prospecting licences were granted under mining legislation which gave the Inspector of Mines all the powers reasonably necessary to put its provision into effect.

CSO: 5000/9073

MORATORIUM BARS EXPLOITATION OF 11 GEOTHERMAL FIELDS

Temporary Protection Given

Auckland THE NEW ZEALAND HERALD in English 30 Jun 82 p 3

[Text]

Eleven North Island geothermal fields have been granted temporary protection against exploitation under a moratorium announced yesterday by the Minister of Energy, Mr Birch.

Mr Birch said that drilling only for monitoring purposes would be allowed in the fields until a Government study on the use of geothermal resources was finished.

The moratorium would apply to the Waimangu, Ketetahi, White Island, Waiotapu, Orakei Korako, Tiki-tere, Te Kopia, Paukohurea, Waikite, Tokaanu-Waihi-Hipaua and Reporoa fields.

All the fields except Reporoa were on a Nature Conservation Council list of fields worth preserving because of their unusual characteristics or scientific value, Mr Birch said.

Paper

Reporoa had been included, he said, because it was thought to be connected to a number of other fields.

Mr Birch said the recently formed Geothermal Co-ordinating Committee was preparing a paper entitled "Geothermal Resources in New Zealand." It would form

the basis for policy decisions on the future use of the resource.

The minister said he would write to the Rotorua District Council, asking it to institute a similar policy for its own part of the geothermal field.

Questions

The Broadlands, or Ohaki, geothermal field near Taupo is apparently not covered by the moratorium, although it could be some time before the field is developed as the basis of the country's second geothermal power station.

Negotiations between the Government and the Maori owners of the field have not yet resolved the land tenure questions relating to the development.

The director of the Maori Arts and Crafts Institute (which administers the Whakarewarewa thermal reserve), Mr Stuart Harris, said last night that he was "absolutely delighted" that the Government was at last taking the issue seriously.

"Even though moratoriums do not mean a total ban, at least there is a pause period for greater knowledge to be discovered before geothermal fields die," Mr Harris said.

National Authority Sought

Auckland THE NEW ZEALAND HERALD in English 1 Jul 82 p 8

[Text2

The chairman of the Maori Arts and Crafts Institute, Dr Peter Tapsell, believes a national energy authority should be set up to control the entire Rotorua geothermal field.

"Recent events have shown that local authorities are too subject to local political pressures and utterly unsuited to controlling an important national resource such as geothermal energy," Dr Tapsell said yesterday.

It was equally clear that the present situation, whereby the Rotorua District Council was responsible for part of the field and the Ministry of Energy for the rest, was quite hopeless.

'Greedy People'

Dr Tapsell, who is Labour MP for Eastern Maori, believed that only a body such as a national energy authority would be strong enough to "resist a few influential but greedy people" and ensure that geothermal energy was not wasted and was used in such a way as to protect geysers at the Whakarewarewa Thermal Reserve.

His comments followed an announcement by the Minister of Energy, Mr Birch, that 11 North Island geothermal fields had been granted temporary protection against exploitation under a moratorium.

The Rotorua field was not included in the 11 but Mr

Birch said he would write to the district council and ask it to institute similar policy.

Dr Tapsell said the minister's announcement was a small step in the right direction.

"But he appears to have dodged taking any action to protect Whakarewarewa."

Action Urgent

"The Whaka field is far and away the most important from the point of view of tourism and the environment. It is here that action is most urgent and necessary."

Part of the Whaka reserve comes under the Rotorua geothermal field (the Rotorua city area prior to amalgamation in 1979).

Dr Tapsell believed that the moratorium should extend to the drilling of both new and replacement geothermal bores.

It is understood that the minister has exempted replacement bores from the moratorium.

Meanwhile, the Press Association report that the Nature Conservation Council has welcomed the moratorium on geothermal drilling.

The council chairman, Dr Carolyn Burns, said she was pleased the council's recommendations had been adopted by the Government.

The moratorium was "especially welcome in view of the past alarming rate at which geysers had disappeared through development."

CEMENT PLANT ORDERED CLOSED FOR POLLUTION

Manila BULLETIN TODAY in English 28 Jul 82 p 32

[Text] The Rizal court of first instance has ordered a cement company to close its batching plant near Don Mariano Marcos Ave., Quezon city, and pay more than ₱1 million to six residents for polluting the neighborhood with cement dust.

Ordered shut down was the plant of Daytona Construction and Development Corp. with business offices at 252 Don Mariano Ave. Its plant is on South Zuzuarregui Ave., a side road of Don Mariano Ave.

CFI Judge Eduardo C. Tutaan acted following trial on the complaint filed by former National Library Director Ernesto Rodriguez, Jr., his son Ernesto L. Rodriguez III, Sacha del Rosario, Jose P. Genito, Zenaida Z. Rodriguez and Enecerio Mondia.

Judge Tutaan declared the cement plant operation a "nuisance" and ordered the company to pay a total of ₱1,290,000 in damages to the residents.

The court found that cement dust from the batching plant was affecting the health of the residents. "The noise, the vibration, the smoke and the odor generated by the day and night operation of the plant must indeed be causing them serious discomfort and untold miseries," the judge said.

The court assailed the mayor's office for issuing a business permit to the company to put up its cement plant in a residential area. "The obvious purpose of zoning--the protection of public health, convenience, safety and welfare--was not considered when the company was granted permit to do business in a residential area."

The judge found that Rodriguez III's residential lots consisting of 8,892 square meters have been fully covered by cement dust and all plants have died. Thus, the market and usable value of the property was greatly reduced, he said.

The elder Rodriguez submitted a medical certificate to show that he was recently taken ill with acute bronchial asthma and hypertension.

CSO: 5000/5788

SRI LANKA

BRIEFS

FLOW OF EFFLUENTS CAUSE ALARM--Environmentalists view with alarm the extremely large volume of effluents flowing into streams which eventually find their way into the Negombo Lagoon from the Ekala area. A textile processing factory is the chief offender, emptying several hundred gallons of dye, oil and chemicals. "Everything in the vicinity is dead including plants and at this time the smell is unbearable," said an environmentalist. "Last year this same place was shown to a Ministry secretary who promised to have some action taken but nothing seems to have happened yet," he added. Informed sources say that no factory can be established in India without a clearance certificate from the Department of Environment which requires an environmental impact assessment statement so that incidents of this nature are avoided. "It's high time Sri Lanka too, introduced legislation of this nature," was the consensus of the environmentalists concerned. [Text] [Colombo DAILY NEWS in English 21 Jul 82 p 1]

CSO: 5000/5788

ECONOMIC DEVELOPMENT HAS GREATLY HARMED ENVIRONMENT

Kuala Lumpur BUSINESS TIMES in English 24 Jun 82 p 19

[Article by Suchin Preecha in Bangkok]

[Text]

LIKE all developing countries, Thailand is faced with the problem of reconciling its economic development programmes with the need to protect its environment.

Authorities admit that it's a difficult dilemma that's almost always resolved in favour of development to the detriment of the environment.

"You have to admit it," said a government official, "the economic imperatives at this stage of our development simply outweigh the dangers posed by pollution."

He added: "It's a sad commentary on a nation's struggle for survival that development often jeopardises the environment. But it's a reality and you can't ignore it."

Even diehard environmentalists admit that economic development comes first in the pollution versus economic progress issue.

However, they insist that a line has to be drawn between economic imperatives and what the nation's level of pollution the environment could take.

Dr Khasem Sanitwong Na-Ayudhaya, secretary general of the National Environmental Board (NEB), lamented that the country's past development plans emphasised only economic growth without considering its impact on the environment. "We have achieved some material progress by raping nature," he said.

He said that natural resources had been rapidly exploited or destroyed by both the government and private sectors without considering their effects on the environment.

The extent of environmental destruction cannot be overemphasised. During the past two decades, for instance, Thailand's forest reserves have dwindled dangerously low.

A 1973-77 satellite photographic survey made by the Faculty of Forestry of the Agriculture University in Bangkok showed that the country's forest cover had dropped from 123 million *rais* (one acre is about 2.5 *rais*), or 38 per cent of Thailand's total land area to 82 million *rais*.

The Forestry Department reported that the rate of forest destruction was as high as 10 million *rais* a year. Latest statistics showed that only 20 per cent of Thailand's total land area remained forested.

Massive forest destruction has seriously affected the country's major rivers. An old Thai saying that, "There is rice in the field and fish in the river," has since been changed into "We still have rice in the field, but there are few fishes in the polluted rivers."

Thailand's rivers, which used to be the major sources of irrigation in the glory days when Thailand was one of the top rice producers in the region, are heavily polluted with toxic chemicals like pesticides.

In the urban areas, industrial wastes are the main pollutants. Millions of tons of industrial wastes are dumped into Thailand's river every year. The Me Klong and Chao Phraya rivers are examples of vital Thai waterways dying because of industrial pollution.

The problem of river pollution has "remained despite government efforts to solve it. Many environmental problems are complicated and take a long time to overcome," said Dr Khasem.

Most of the old industrial plants along the rivers have no waste-treatment systems. Wastes are dumped on any available space, often into the rivers.

Authorities make the best of their limited resources and manpower in the enforcement of the 1975 Environmental Promotion and Control Act. The law requires industrial plants to install proper waste-treatment facilities.

But there are too many plants and too few law-enforcers to apply the law to the hilt.

Moreover, some factories would rather avoid the law, if they can help it. "Investment in a treatment system is high and it's quite difficult to expect voluntary compliance with the law. Many big factories do not want to pay the huge expense, while the struggling plants simply can't afford it," Dr Khasem said.

Air and noise pollution is another growing problem that Thais, especially those living in the urban centres, must content with.

Dr Khasem said that if it were any consolation to the Thais, the pollution situation in other Asian countries was just as bad. And he blamed public apathy for the worsening problem.

He said: "Environmental problems have been left to the government to solve. There is no public participation. People who complain about pollution are mostly those who are directly affected by it because of their proximity to a factory or river."

What people do not seem to realise is that they are affected by pollution in varying degrees wherever they are."

He said that the best approach to the problem is to enlist everybody's assistance. "People must be made aware of the dangers posed by pollution. They must be encouraged to participate actively in the effort to minimise the problem."

To draw people's attention to the problem, the NEB has introduced environmental lessons in schools, starting from the primary level. "I believe that by educating the people, we shall have gone a long way in combating pollution," Dr Khasem said.

- Depthnews Special

LAND USE RESTRICTIONS GAIN IN SENATE; PROJECT FOUGHT

Law To Ban Development

Hamilton THE ROYAL GAZETTE in English 8 Jul 82 p 5

[Text]

A change in the law that will allow owners of land and buildings to ensure development never takes place on their property was approved in the Senate yesterday.

The Bermuda National Trust Amendment Act allows the Trust, with the sanction of the Planning Minister, to make binding agreements with owners who want perpetual restrictions on development of their land.

The legislation was presented by **Senator Gerald Simmons** a former president of the Trust, who hailed it as a major step.

"The owner of a farm property might wish to ensure it remains farmland for time immemorial," he said.

"This sort of agreement would ensure it always will."

Senator Simons said the agreements would also mean buildings could be protected without the Trust having to buy them, as has usually been the case in the past.

Senator Jennifer Smith (P.L.P.) said the Opposition were "very pleased" to see the legislation and were supporting it.

Apartment Project Battle

Hamilton THE ROYAL GAZETTE in English 12 Jul 82 p 1

[Text]

Another environmental fight loomed on the horizon last night as a result of a proposed development at Ord Road's western end of five apartment blocks containing 20 two-bedroom units.

Roseville Development Objectors, who are Ord Road residents, will voice their objections to the proposal on Thursday at 8.30 a.m. at a Development Applications Board hearing. Fellow objector are the Bermuda National Trust, the Road Safety Council and Warwick East M.P.s Mr. Lloyd James and Mr. Walter Brangman, who met with the R.D.O. during the weekend.

The object of their protest is the proposal of developers Mr. Dickie Bird and Mr. John Butterfield. The Warwick property includes registered arable land.

Mr. Kenneth Monkman, chairman of R.D.O., explained in a press release that Mr. Gladwyn Robinson farms a large field adjacent to Roseville Garden, which he may lose together with a good crop of sweet potatoes if the Planning Department approves the proposal.

The five apartment blocks would not only bury Mr. Robinson's field, which measures 0.36 acre, but also an even larger piece which presently lies fallow.

"This piece located adjacent to the old railway right-of-way has provided our endangered bluebirds with a quiet haven amidst the heavily developed Warwick parish," Mr. Monkman con-

tinued.

He noted that Forest Hills development, just south of Roseville, is already overloaded by traffic. "Forest Hills contains some 50 lots, which when completed would have as many as 120 homes in it," he added. "Under the present Traffic Regulations, each home could have as many as two vehicles registered or a total of 240 cars and cycles."

"This staggering figure does not include trucks and vans whose drivers are permitted to take their vehicles overnight. This all adds up to a very dangerous and unsightly additional burden on a winding, picturesque road."

The objectors also stated that they were not opposed to development in the area but to the "intensity" of the proposed development.

CSO: 5000/7555

AIR POLLUTION, OCCUPATIONAL HAZARDS CAUSE CONCERN

Quito EL COMERCIO in Spanish 12 Jul 82 p A 1

[Article by Marco Mendoza]

[Text] Air pollution resulting from industrialization and the increase of fuel consumption have become a source of concern because its effects are becoming wide spread, according to what specialized agencies are saying.

Urbanization and industrialization increased greatly before it was noted that the air was being contaminated. Man put off looking into its components for centuries, but recently he has become aware that he cannot continue using the atmosphere as a great rubbish heap without putting his welfare and his very life in danger.

Atmospheric contamination is a problem that worries the entire world. Transit of cars, burning of fuels and disposal and waste systems are poisoning the air.

Agricultural areas near cities use a variety of pesticides which get into the rivers whose waters are considered potable by the local towns. Also, drilling for oil in the sea is a menace to the environment. Hydrocarbon contamination can destroy the ecological balance of a nation.

Public retail stores are contamination points for foods. A study by the Ministry of Agriculture concluded that tomatoes sold in the markets of Quito contain the insecticide "Ramaron." It is applied to the plants each week during their growth.

Problems of environmental health also include aspects of occupational health, but these are given less attention. They show that workers in certain kinds of industry are exposed to physical, chemical and biological risks that bring about occupational hazards. In general terms, between 30 and 40 percent of this group of workers are affected by job related deafness.

Many suffer the consequences of dermatosis due to the use of chemical substances. There are instances of silicocons in workers in quarries, ballon factories, etc. Occupational cancer is a risk that even the International Labor Organization (ILO) is detecting in a series of manufacturing industries.

Biological and chemical contamination greatly affect many industries causing worker absenteeism.

Industrialization is hazardous if contamination effects are not controlled. Here, for example, industrialization is already a hazard. In the last years it has grown rapidly. The annual average growth rate between 1970 and 1973, according to the Fundacion Natura was 10.5 percent. It rose to 15.4 percent annually from 1975 to 1976 and it reached 25.3 percent from 1976 to 1979.

The principal industrial centers are located in Quito and Guayaquil and they represent nearly 80 percent of the production. Cuenca, Manta, Ambato, Riobamba, Latacunga and Esmeraldas are centers of lesser importance. Of a total of 946 qualifying businesses, 79 percent are concentrated in the Pichincha and Guayas Provinces. About 60 percent of the light industry and handicrafts are located in this same region.

One must look with special attention to the fact that industrial plants have developed haphazardly, locating themselves within cities without responding to any type of ordinance, which, even if one existed, "is a dead issue."

Air contamination is a latent danger. One of the greatest causes for this hazard are exhaust fumes from automobiles. The number of vehicles is increasing rapidly in the country. Between 1970 and 1980 it has increased more than six-fold, says the Fundacion Natura. During this same period gasoline consumption increased 10 percent.

Air pollution by ethyl lead is seen as the most serious problem. Tetraethyl (Tel) is an ingredient in gasoline that escapes during combustion. For every thousand gallons of gasoline burned, the air gets 0.14 grams of solids, including zinc, carbon, metallic oxides and a good share of lead in the form of Tel.

Breathing this substance affects the central nervous system and other vital organs. Anemia is one of the manifestations of lead intoxication.

Diesel fuel also shows a more than 3 percent increase in consumption in the last 10 years. Diesel engines produce carbon particles, especially in engines needing tune-ups, which abound in the cities of Quito and Guayaquil.

A special and very important source of contamination, according to studies, is in the incineration of garbage. The volatile ashes and odors represent a frequent problem. Trash and garbage dumps, from the point of view of contamination, are a hazard to which man is always exposed. Its moisture content and claoric potential make the design and efficient operation of incinerators difficult.

In view of all this, a movement has begun to take shape which sets forth the necessity for taking the needed precautions to forewarn a greater pollution of the air in our country "before it is too late."

9908

CSO: 5000/2141

CHEMICAL LEAK CONTAMINATES KINGSTON WATER SUPPLY

Kingston THE DAILY GLEANER in English 14 Jul 82 pp 1, 17

[Text] A section of Western and Central Kingston's water supply was contaminated yesterday by wood-preserving chemicals from Wherry Wharf Limited at Newport East.

Contamination of the water supply was caused by the leaking into the water supply system of 2,500 gallons of chemical solution used for treating lumber, making it resistant to termites, from a 20,000-gallon cylinder.

In a statement to the House of Representatives on the incident, the Minister of Public Utilities and Transport, the Hon Pearnel Charles, said the advice from engineers working on the problem yesterday was that there was no great need for alarm and that the effect on consumers would depend on the level of intake.

Prime Minister Edward Seaga yesterday evening instructed that there should be an immediate investigation and that all persons in the island who have any such tanks connected to the water system should immediately disconnect them and put the connection above the chemical level of the tank.

Meanwhile, residents of downtown Kingston have been requested by the National Water Commission not to drink water which had a greenish/yellow discoloration. Yesterday the NWC mobilised an emergency crew to flush out the water mains in the affected area and is monitoring the water quality which is expected to return to normal today.

A Wherry Wharf spokesman told the Gleaner yesterday that low water pressure or a total water lock-off in the downtown area could create a vacuum pulling the chemical from the storage cylinder into the water distribution line. The Gleaner understands that there was a lock-off in the Wherry Wharf area on Monday night.

The Managing Director of Wherry Wharf, Mr Hugh L. Wilson, said the solution contained a small percentage of Arsenic Pentoxide, Copper Oxide, Chromic Acid mixed with water with a concentration of less than one percent.

Mr Chris Marley, a Director of the company, said this incident was the first to have occurred in the history of Wherry Wharf which has been operating since 1967. He said steps had already been taken to isolate the storage tank from the water system. The feeding system leading to the tank is being re-designed to ensure that the situation would not recur.

Mr Charles said it was expected that chemical tanks would have a no-back-flow valve, but indication so far is that the Wherry Wharf tank had none. The tank is used by the company to store chemicals used to treat lumber. The chemicals involved include arsenic, copper oxide and chromic oxide.

Mr Charles told the House: "At about 8.30 this morning, it was discovered that a tank at the Wherry Wharf which contained chemical for the treating of wood had deposited its chemicals into the National Water Commission's water system.

The Water Commission had to turn off its water last night in the lower part of Kingston to re-charge the system from the Rio Cobre. As a result the chemical from the tank fed back into the system.

"The Water Commission after being advised isolated the area, opened all hydrants and is at this time flushing out the system. The public has been advised of the problem and all persons living in the area west of Ellerson Road along North Street, out to three miles and below are asked not to consume any water that is discoloured.

I am to advise the House that the chemical in the tank consisted of 24.5 percent arsenic peroxide, 13.3 percent copper oxide, 32.2 percent chromic oxide, 28 percent water and 0.8 chemical concentrate.

"I have been advised by the engineers and scientists that there is not much need for alarm, dependent on the dilution and the concentration of intake or consumption.

This Minister has contacted the Prime Minister and advised him of the situation and the Environmental Control Division of the Ministry of Health has mobilized all the necessary medical personnel and all the laboratories in Kingston are assisting with the testing and we hope that later this afternoon the go-ahead for the using of water again (in these areas) will be given.

A few million gallons of water will have to be flushed out of the system and all people in these areas who have water in reserved tanks have been advised to flush them out.

The Prime Minister has instructed that an immediate investigation be carried out and that a public statement be made advising all persons in Jamaica who have had any such (chemical) tanks connected to the water system to have them disconnected immediately; and that instructions be given that any such tank in any such factory or otherwise that need water that the connections be made from above the tank, above the chemical and not below.

"It was expected, Mr Speaker, that any such plant should have had a no-back-flow valve and indications are that the Wherry Wharf one did not have. We can only say so at this time as investigations will continue."

The Gleaner understands that the NWC did not know that the tank was attached to the Wherry Wharf supply and that several hours passed between the time the leak was found by the company and when the NWC was made aware.

It is understood that after Wherry Wharf found the leak it had sought to deal with the problem while the chemicals had already leaked into the NWC supply and had contaminated the domestic supply. When the NWC discovered the accident the supply to consumers was immediately cut off in the afternoon.

The Gleaner also learnt that some 2,500 gallons of chemicals escaped from the company's 20,000 gallon cylinder which stores chemicals used for treating lumber.

A team of health officers from the Ministry of Health who were mobilized by the Parliamentary Secretary in that Ministry, Mr Karl Samuda, was up to press time looking into the health aspects of the contamination.

Efforts by the Gleaner to find out what effects, if any, are likely from drinking the water proved unsuccessful. However, it is understood that a Health Ministry team had called an emergency meeting last night to discuss the situation.

CSO: 5000/7555

MINISTER OUTLINES MEASURES TO PREVENT ENVIRONMENTAL POLLUTION

Dar es Salaam DAILY NEWS in English 19 Jul 82 p 1

[Article by Mkumbwa Ally]

[Excerpt]

THE Minister for Lands, Housing and Urban Development, Ndugu Mustafa Nyang'nyi, has urged Tanzanians to visualise the dangers of desertification and environmental pollution facing the country as a precondition to prevent them.

Presenting his Ministry's 1982/83 estimates on Saturday, Ndugu Nyang'nyi told the National Assembly that the country was among victim areas of spreading desertification and environmental pollution and that comprehensive short and long-term preventive plans were vital.

He said world-wide, deserts annexed an average of six million hectares of land annually for the last 10 years, adding that the trend continued despite national and international efforts to check it.

The Minister said un-

checked bush fires and tree felling mowed eight million hectares of tropical forests annually on average over the period.

"The result of this has been rapid soil erosion, reduced rains, dry springs and widespread drought," he pointed out.

Ndugu Nyang'nyi said unco-ordinated farming methods and random disposition of storm water made the problem more compound to Tanzania.

He said his Ministry was preparing an educational programme to mobilise the people to understand the scope of the impending danger through the Press.

"It is important that before preventive plans are implemented, the people should grasp their meaning and objectives to ensure maximum participation," he said.

He told the House that measures against en-

vironmental pollution would include construction of sewerage systems in urban areas. Some 13,618,000/- would be spent on such projects in Dar es Salaam, Morogoro, Mbeya and Tabora during the year, he said.

He said the final report on the Dar es Salaam project had been submitted to the Government and that implementation would include extensions to the existing system and construction of 3,600 latrines.

Ndugu Nyang'nyi said the first phase of the Tabora sewerage system had been completed at 4.6m/-. The completed part would cater for secondary schools, colleges of national education and the secretarial college at Tabora town.

Tenders would soon be called for designs of drainage and storm water systems in the Mbeya municipality, he said.

BRIEFS

VILLAGERS STEAL WATER--Bulawayo--District drought relief committees in Matabeleland South are calling for the speeding up of water development projects after reports that in some parts of the drought stricken province people are either stealing or paying up to \$3 for a drum of water. Teachers in Plumtree are reported to be paying for water and the chairman of Umzingwane District Council, Cde Masilela, said: "People need help to get water and we were promised water-pipe schemes but nothing has been done. In some cases people have been arrested for stealing water from nearby farms." To help villagers get water from dried up riverbeds a sand-abstraction programme has been launched. [Text] [Harare THE HERALD in English 21 Jul 82 p 7]

DROUGHT INCREASES POACHING--Bulawayo--Poaching is on the increase in Binga because of the drought, the chairman of the Matabeleland drought relief committee, Cde Jacob Mudenda was told during his two-day tour of the Matabeleland North districts. It was pointed out by Hwange magistrate Mr S. Nari who is also the visiting magistrate to Binga. He said court cases involving poaching were on the increase and people said that they were doing it to earn a living. At Hwange, one councillor suggested that food be railed to the mining town as there was a depot there but Cde Mudenda said this would cause delays. A councillor at Lupane said that people were not satisfied with the 16-litre tins being used for distribution. In reply, Cde Mudenda said that the national committee had said that each recipient should get 16 kg. If the tin carried that amount then it was enough. Councillors had to explain to the people that the food was meant for survival only. At Inyati, the problem was pensioners in the Kenilworth area. Under the criteria laid down by the national committee, they are not supposed to benefit from the drought relief but Cde Mudenda said such cases had to be studied individually. Nkayi's problem was getting more groundnuts than maize. This was to be checked. [Text] [Harare THE HERALD in English 22 Jul 82 p 4]

CSO: 5000/5786

AIR POLLUTION WORSE THAN LAW ALLOWS

Vienna PROFIL in German 19 Jul 82 p 49-51

[Article by Josef Votzi: "Danger! Air under Attack"]

[Text] In all large cities of Austria air pollution is worse than permissible by law. While the authorities continue to fight about how much "federal air" and how much "Land air" is involved, the power lobby still calls the shots when it comes to emission controls.

The Graz men's store "Gentlemanlike" is taking advantage of the seriousness of the situation by coming up with a marketing ploy: owner Ludwig Draxlbauer has brought out Austria's first environmental protection tie. The tie, which costs just under 300 Schillings, permits its wearer to check on the quality of the air he is inhaling at a given moment. If there is sulphur dioxide present in appreciable quantities—so the promotional material claims—the tie reacts by developing holes in its lining. The manufacturer says that if the holes do show up, the idea is to change the environment and not the tie.

Graz was the right place to test the neckties. During this January alone, the smog alert should have been sounded on 22 days out of 31. In the northern parts of town, maximum permissible levels of SO₂ were more than double what they should be at times. The authorities did not sound the alert by resorting to a trick. For several years now, Styria has had a clean air law on the books but the corresponding regulations setting maximum levels and other measures were not put out until this March—in other words, not until the worst was over.

In the winter, the air in Linz is adversely affected by the heating season and the fact that weather conditions do not permit an exchange of air. The resultant smog regularly calls for a kind of internal alert. "Since we instituted our smog alert plan in 1976," says Johann Stubenrauch, Upper Austria's clean air chief, "we have reached the pre-alert stage at least once each year in the late fall or winter." In practical terms, this means that environmental protection officials are now watching their instruments around the clock, waiting for things to get better.

Existing regulations permit them to do little more than that. Air quality in Austria happens to be (another) victim of excessive federalism. The bureaucracy makes a fine distinction between federal air and Land air. Whatever finds its way into the atmosphere via private heating plants—particularly SO₂—is classified as Land air and the vast remainder—namely 90 percent of all pollutants—is classified as federal air. And this latter in turn is the responsibility of three different ministries. Auto emissions are the responsibility of the minister of transport; industrial pollutants are those of minister for commerce and pollutants from power plants and remote heating installations are the concern of the ministry of building and construction.

But for the many lords and masters, some of the air just seems to vanish—into thin air. Lower Austrians for example are swamped with annual SO₂ levels equal to 7,000 railroad freight cars without being able to pinpoint their origin. For all of Austria, the corresponding total amounts to some 450,000 tons of pollutants.

One-quarter of all SO₂ emissions, it has been found, is caused by our 33 caloric power plants and remote heating plants; another quarter is caused by similar industrial and commercial installations.

The scientists know this much about the effect this continuing attack on our air is having: SO₂ is an irritant which attacks the mucous membranes of the human eye, the respiratory tract and the bronchial tubes. Chemical changes effected by body metabolism do not exclude chronic damage to the nervous system. The dust which usually comes down in conjunction with SO₂ poses an acute danger to small children and old people even in minimal doses. This type of unhealthy air, health ministry air expert Wolfgang Struwe says, "turns up in Austria's metropolitan centers particularly during the winter months." Even Vienna's environmental protection official Helmut Loeffler concedes that "injuries to health cannot be excluded here during the winter months."

30 kilometers to the west of Vienna, the doctors have already sounded the alarm even though the district capital of Tulln has not as yet appeared on the countrywide blacklist. Tulln public health officer Willibald Stangl says that autopsies performed on perfectly healthy people have revealed toxic changes of the lung and heart "caused by air pollution." According to Stangl, the extremely high infant mortality in the Tulln district may also be attributable to some extent to poor air quality. For some time, a chemical plant and a caloric power plant have been polluting the air around Tulln. Ever since it became known that NEWAG and the electric system are planning on another steam power plant in the Tullnerfeld, protests from the population and from medical men have been mounting. A resolution signed by 70 physicians from the district provided for much excitement at the negotiations held 3 weeks ago on construction of the coal power plant at Duernrohr. The physicians and some local residents are calling for 100 percent desulphurization of the emissions so as "to prevent serious injury to health, disablement and deadly ailments among the people under our care."

Those responsible for building the power plant say they will be able to prevent only a little more than half of the "aggressive poisons" from escaping. 2 years ago, they were willing to come up with only 40 percent. "At that time," says Otto Sommerbauer, managing director of the electric system, "all the experts testified that there was no threat to plant and human life." Assistant medical director Franz Stoeger of Tulln has this to say about his colleague's findings: "The medical expert takes 36 pages to say how dangerous it all is and then on page 37 he suddenly concludes that there are no medical grounds for not starting operations. But we medical men are not only called upon to repair the damage once it has been done. Health comes first; money comes second—and even electricity turns out to be more expensive that way."

Desulphurization costs of one billion Schillings, the operators say, would raise the price of electricity produced by the Duernrohr plant by 10 to 20 Groschen per kilowatt hour. "If even dental technicians claim to know more than our medical expert," Sommerbauer complains, "then the rule of law in Austria is in a bad way indeed. Construction has already been delayed by more than 1½ years."

Not the least reason for the fight about Duernrohr being so violent is the fact that the desulphurization level there will become standard for all future caloric energy plants. There is another connection in that the technical expert for the project has been acting in a dual capacity. Albert Hackl, a professor of engineering, not only selected the type of desulphurization process to be employed on behalf of the Lower Austrian Land government and then gave it his imprimatur on behalf of the builder (the mayor of Zwentendorf) but he also is a technical expert for the ministerial committee that has worked out countrywide norms for these installations and others like them. Duernrohr thus meets the SO₂ emission level which the so-called boiler regulation will specify for future power plants.

The regulation not only represents a compromise between officials and operators but also is the result of a more than one-year tug-of-war between three ministries. The construction, commerce and environmental protection ministries all had to sign off on maximum permissible emission levels. Sekanina and Staribacher already did so in May. Now Kurt Steyrer, the Minister for Health and Environmental Protection, has followed suit after wavering for some time. "I am not happy with the result," he says. "The levels are relatively high and they do not correspond to the latest state of technology as required by law. Vis-a-vis the other ministers, I was faced with the choice of risking that nothing whatever would happen or that this regulation would be approved which at least prevents all existing installations from continuing to pollute the atmosphere."

The projected coal power plant at Mellach in Styria proves that present desulphurization technology is good enough to satisfy almost half of the norm. Under pressure of a local citizens' initiative, the two large political parties suddenly outbid each other on emission control levels. Kurt Steyrer is

hoping for help from that quarter so as to achieve what two minister colleagues as well as the soft coal and power lobby have thus far denied him. "I hope," he says, "that the citizens' initiative movement will be as strong as in Mellach so that we will in many instances remain below the levels called for by the regulation."

In the Duernrohr case, Vienna's environmental chief Peter Schieder is holding all the trumps at the moment. By saying "go to the Vienna Woods and say farewell to the trees," Schieder has joined the ranks of those calling for 100 percent de-sulphurization of the giant 700 megawatt plant in the Tullnerfeld. The city of Vienna appealed to the courts to be granted local resident status.

In the meantime, Schieder—worried that he might have gotten ahead of himself—called on minister Steyrer to arbitrate the Duernrohr dispute. "I honestly don't know whether I am the one to do this," Steyrer says. "I do have strong views of my own. Present technology surely ought to make 85 percent de-sulphurization of the Duernrohr plant possible." And Steyrer adds: "This is bound to have some consequences on Vienna, too."

The Simmering power plant in Vienna alone emits twice as much SO₂ per hour as Duernrohr ever will the way things stand at the moment. The direction of the wind frequently carries these pollutants into the Vienna Woods area.

"The woods are in danger," forest ecologists have been crying for years whenever the subject turned to "acid rain," a by-product of heavy SO₂ emission. Acid rain in the form of sulphuric acid formed in the combination of SO₂ and rainwater seeps into the ground and so is taken up by the trees insofar as SO₂ in its pure form has not already done the job.

Experts say that between 3 and 5 percent of the Austrian forests are already acutely affected by this silent death.

The economic consequences of acid rain have already led the farmers and forest administrators of the Lavant Valley in Carinthia to go to court. They claimed damages amounting to 12 million Schillings annually due to the fact that the steam power plant at St Andrae spills up to 2,000 kilograms of SO₂ an hour into the valley. After the case had finally been heard by the supreme court in 1979 the operators paid back 1,000 Schillings per hectare—half the amount claimed—for the years from 1969 to 1979. For forest damages incurred in the meantime the courts will have to find in new proceedings. The operators appear to figure that partial reimbursement still comes cheaper than the installation of a de-sulphurization plant.

Christoph Habsburg-Lothringen, the forest administrator concerned, says: "Unfortunately, industry still tends to think in short term patterns. By increasing the height of the smokestacks to 220 meters, they are hoping to enlarge the affected area and decrease the SO₂ concentration in the atmosphere—but in the end things stay as bad as they were."

Until recently, the higher smokestack gambit was the best solution the operators and the authorities managed to come up with. The consequences of this policy can be felt all over Europe. Without regard to national frontiers, "acid rain" is exported and imported clear across the continent. "Even if Austria no longer emitted any SO₂ at all," clean air specialist Wolfgang Struwe says, "I doubt whether the 'acid rain' picture in our country would change appreciably."

This contention will be hard to prove in this century. As early as in 1975, parliament approved environmental protection rules for woodlands. The orders for implementation have still not been issued. Guenther Haiden, the author of the legislation, puts it this way in explaining the 7 lean years: "It has been tough sledding throughout this time because there are diverging interests. But I will put the matter to the cabinet this summer still."

What has become public with regard to the implementation text does not sound too encouraging. The most recent draft was characterized in an internal health ministry memorandum "as an attempt to supplant the major provisions of the forestry law with regard to air pollution with provisions favorable to industry."

The health ministry suspects the minister of commerce above all of being out to scuttle environmental protection legislation. As it happens, the implementation order not only requires the signature of agriculture minister Haiden but those of Staribacher and Sekanina as well.

Kurt Steyrer wants to see a clean air act passed prior to the next elections. He calls it the "real key to environmental protection." Steyrer would like to assume sole responsibility for the federal air and the Land air presently lodged in three different ministries. By divesting himself of the responsibility for the country's spas, he would like to assume the other duties before the year is out. "Then I would be the one responsible for setting maximum levels," he says, "and the results would certainly be better than under the boiler regulation."

Environmental standards such as they are, says Vienna environment official Helmut Loeffler, "have always been porkbarrel affairs. It was not a matter of substantive arguments but of balancing off conflicting interests." Those who do pollute the environment are rarely prosecuted. "The only thing some of the Laender are really good at now," says environment expert Werner Katzmann, "is at making measurements. A lot of money was spent on setting up the appropriate networks. But what came after has never amounted to anything yet."

9478
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LARGE QUANTITY OF PCB DUMPED ILLEGALLY IN ARCHIPELAGO SEAS

Was Supposed To Be Shipped To GDR

Helsinki HUFVUDSTADSBLADET in Swedish 1 Jul 82 p 1

[Text] Our present laws on toxic substances and problem waste are sufficient, but the problem is the poor supervision. For the time being, the various facilities should concentrate on carefully storing the waste that cannot safely be destroyed. Thus, the problem waste facility in Riihimäki should begin operating as soon as possible, according to Olli Ojala, head of the environmental protection section of the Interior Ministry.

According to the waste disposal law, an industrial plant that produces problem waste must devise a plan for waste disposal stating how that plant proposes to destroy or store the waste. The plan is submitted to the authority in the municipality in question that is responsible for waste disposal problems. The plan then is sent to the provincial council. "The problem is that it is impossible for us to make sure these plans actually have been sent for examination and whether they are based on objective considerations. The division of the environmental protection bureaucracy does not help matters, either," Ojala said.

In the final analysis, the person who recently dumped toxic substances into the Archipelago Sea bears the responsibility. But those who delivered the toxic substances to him are not free of responsibility, especially since they did not investigate the waste disposal company's ability to transport and destroy the waste, Ojala said.

"To be sure, the company maintained that the waste would be transported to the GDR, but such exports require approval from the authorities and, in this case, even the approval of a cabinet minister. The recipient country also should be contacted. We have received no information on this transport, even though some rumors have been in circulation," Ojala said.

"In the Dragsfjord case, not only the ocean protection law, but also the criminal code was broken, since the containers were left to float around freely so that anyone could come into contact with them," Ojala continued.

Problem Waste Facility

Ojala said it was extremely important that the problem waste facility in Riihimäki begin operating as soon as possible. According to Ojala, the plant would cause no significant damage to the environment.

Waste that contains oil comprises the largest group of problem wastes. Surface treatment wastes, which are extremely difficult for small companies to destroy, are another problem. Solvents used in the chemical, graphics, and pharmaceutical industries also are a major cause of concern.

It is possible to recycle and reuse these solvents, however. Pesticides that have been contaminated or have not been used also lead to problems. Ojala believes, for example, that DDT still may be found in various warehouses. In the Turku case, PCB which no longer is used in industry was found.

Household Poisons

Households also contain wastes that many people do not even see as problem waste. One example of such waste is batteries that contain mercury and cadmium which are harmful to the environment. Old paints also may contain cadmium.

Small batteries used in cameras, pocket calculators, etc. usually contain much mercury. These batteries should be collected rather than transported to municipal waste facilities.

New Law

In April 1983 a new law will take effect requiring municipalities to dispose of problem household waste, Ojala said.

Police Search For Ship Owner

Helsinki HUFVUDSTADSBLADET in Swedish 7 July 82 p 11

[Article by Staffan Bruun]

[Text] Police are searching frantically for the owner of the trawler Normandie. It is believed that the toxic waste found near Dragsfjärd was dumped from the Normandie. As of yesterday, however, the boat's owner had not been found. A nationwide search by police is expected to begin shortly.

No new poison finds were made yesterday in Dragsfjärd. Police are continuing interrogations to learn more about the dumping.

Two persons are in custody: the truck driver who drove the toxic waste to Kasnas and the Helsinki lawyer who is associated with Euro Industri. He led the negotiations with Nokia and Centrallaboratoriet. It was he who promised that the poison would be transported to the GDR.

But the person the police are most anxious to find remains at large--the owner of the Normandie. Only he can point out precisely where the poison was dumped. He is the only one who can help retrieve the rest of the poison from the bottom of the sea.

"It is hopeless to begin diving before we know exactly where we should look," a police representative said.

Yesterday police in Turku questioned several people who either were suspected of being involved or were witnesses.

Taken Away

The toxic waste discovered Monday in a forest near Turku already has been removed. Yesterday Nokia transported all 20 tons from the forest back to the capacitor plant in Tammerfors. At the same time, Nokia took its share of the toxic waste found in Dragsfjard back to Tammerfors.

Centrallaboratoriet will collect its share in Dragsfjard today and transport the toxic substance to Otnas. So far, 500 liters of poison have been found in Dragsfjarden.

Euro Industri has received a total of 33 tons of toxic waste from Nokia and 2,500 liters from Centrallaboratoriet, but other companies also have delivered toxic waste to Euro Industri. The police have contacted various companies, but as of yesterday their questioning had yielded no results.

Plant May Be Built In Riihimaki

Excavation work for the planned problem waste facility in Riihimaki will begin next week. Finland's Problemavfall AB was granted permission yesterday by the town of Riihimaki to begin construction on the facility.

The attorney general has received three appeals concerning placement of the facility in Riihimaki. All appeals have been denied.

Finland's Problemavfall expects the facilities in Riihimaki to be complete in mid-1984. Only then can the facility begin to receive waste, according to technical director Matti Vattulainen,

"But even now we are helping companies dispose of their toxic wastes. We have contacts abroad with plants capable of handling various types of poisons. We render help to anyone who wants it, but cannot promise results. We certainly cannot promise that the companies will dispose of the waste at a price as low as Euro Industri would charge.

Euro Industri promised to transport the toxic substances from Centrallaboratoriet to the GDR for 2 marks per liter. Matti Vattulainen laughed when he heard the price, but he would not say how much it would cost for Finland's Problemavfall to transport the toxic waste to the GDR.

"The price would be considerably higher, but it would depend on what type of poison was involved, how it would be packaged for transport, how it would be handled, etc."

It may be mentioned that the post office rate for a package weighing 1 kg to the GDR is 35 marks, while Euro Industri wanted 2 marks.

Chemical Factory Spokesman Comments

Helsinki HUFVUDSTADSBLADET in Swedish 7 Jul 82 p 11

[Article by Staffan Bruun]

[Text] Two companies have admitted delivering toxic waste to Euro Industri. Both companies state that Euro Industri promised to transport the toxic waste to the GDR. Neither company suspected foul play, even though Euro Industri asked for only 2 marks per liter to dispose of the toxic substances. Thomas Zilliacus of Nokia and Jan-Erik Levlin of Kemiska Traföradlingsindustrins Forskningsanstalts Centrallaboratorium responded to questions about the case.

"The person responsible for waste management is not a legal expert. In addition, he had no opportunity to investigate Euro Industri."

"The price was not at all low. It was the going rate for such transactions. Previously, we shipped our toxic waste to England. The last shipment was in the late seventies. The price at that time was the same as that received by Euro Industri in this case. We quit sending waste to England because the price increased drastically a year or so ago," information director Thomas Zilliacus said.

"This time when we had to get rid of some PCB, Euro Industri appeared. They promised to transport the toxic waste to the GDR where it was to be buried in salt mines. According to our information, this actually occurs in the GDR."

He was asked if no one suspected foul play on the part of Euro Industri and if the company had been investigated.

"No one suspected anything and the company was not investigated. The waste disposal process at Nokia occurs at a low level. The person at the capacitor plant in Tammerfors who handled the deal is no legal expert. He also had no opportunity to investigate Euro Industri. In addition, the company gave no indication that anything was less than proper."

Zilliacus was asked what would be done with the toxic waste now.

"We will go to Dragsfjärd immediately to reclaim the containers that originated at our plant. In addition, we will remain in contact with the police and do everything possible to recover the waste now lying at the bottom of the sea. It is in our interest to recover the waste before it harms the environment."

What will be done with the poison now?

"First it will be returned to the capacitor plant in Tammerfors where it originated. Then we must try to find a facility that will dispose of the toxic substances in a legal manner. We may have to contact the facility in England again."

Zilliacus was asked what Nokia generally did with toxic waste.

"We use only small quantities of toxic substances. Of these substances, PCB used at the capacitor plant clearly is the most dangerous, but PCB has not been used for 7 years. The waste we recently attempted to dispose of was used in old capacitors. Nokia is a major shareholder in Finland's Problemmavfall. No one will be happier than we when the Riihimäki facility begins to operate."

"In 20 years of operation, this was the first time we had to dispose of toxic waste. Then Euro Industri appeared and we trusted them," Jan-Erik Levlin said.

"It is easy to say in retrospect that we should have investigated this and that, but we acted in good faith. The representatives from Euro Industri were convincing. We simply believed they knew what they were doing. Now we must admit that, unfortunately, they did know," director Jan-Erik Levlin said.

Now 2,500 liters of toxic waste from Centrallaboratoriet are at the bottom of the sea near Dragsfjärd. According to the law, Centrallaboratoriet bears part of the responsibility. Levlin was asked if he expected legal proceedings.

"We have not yet studied the matter. You must remember in the midst of all this that the quantity of toxic waste we produce is small. We simply bore the brunt of the first wave of publicity. It was said that 2,000 to 2,500 liters came from Centrallaboratoriet, but it must be remembered that most of this amount is accounted for by the packaging. The toxic waste is in bottles and canisters containing from several milliliters to 3 to 4 liters. All this was packed carefully in tanks with sawdust."

Levlin was asked if it did not occur to him during packaging that it all would end up in the sea.

"We were given detailed instructions from Euro Industri on how the toxic waste should be packaged. This contributed to our belief that they knew what they were doing. Swindlers act in such a way that their victims are lulled into a feeling of security. This is why they are successful in their deception."

Levlin was asked what his company had done with toxic waste previously.

"This is precisely the problem. We never had toxic waste before. For this reason, we had no experience in such matters. We have operated in Otnäs for 20 years and only small quantities of toxic substances have been used. We maintained a storage room, but it gradually became filled. This year we finally decided to dispose of the waste and at that time Euro Industri appeared

on the scene. The first time we disposed of toxic waste all these problems began!"

He was asked what would become of the company's waste in Dragsfjard.

"We are sending a truck with our personnel today to take care of our share of the toxic waste that has been found. It will be returned to the storage room. Now we must start over and attempt to dispose of the toxic waste.

9336

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PAPER URGES DEVISING NEW HAZARDOUS WASTE RULES

Helsinki HELSINGIN SANOMAT in Finnish 8 Jul 82 p 2

[Editorial: "Elimination of the Waste Problem Must Be Stepped Up"]

[Text] The commotion and agitation created by the poison-filled barrels outrageously sunk into the depths of the Baltic are quite understandable. At issue is no less than those materials that badly contaminate the environment and seriously endanger people's health which are of necessity at present being produced by industry. The problem is a familiar one throughout the industrialized world. The most recent examples of different kinds of major waste disposal scandals include the United States, the Netherlands, Denmark and Sweden.

Our very own scandal has positive sides to it despite its generally negative nature. Among other things, this is arousing people to awareness of the seriousness of the waste problem and to the growing significance of environmental protection in their daily lives. The closer an event comes to the environment one lives in, the more one is interested in it. The Dragsfjord poison controversy can hardly fail to affect everyone. It is of quite a different nature from those relatively small incidents in connection with which the so-called environmental protectionists have usually appeared.

The positive side of this scandal also lies in the fact that it has brought the seemingly incredible shortcomings of our handling of waste out into the open. Implementation of the waste handling law that went into effect in the spring of 1979 has progressed at a snail's pace. The public authorities really seem to have erred in thinking that the matter has been taken care of simply because it is being regulated by law.

A conclusion is to be drawn from the already available facts. Municipalities which under the law have been entrusted with the responsibility of arranging for the handling and control of waste materials have in very many cases behaved in a negligent manner with respect to it. Thus the business of waste dumps is often in a bad way and arrangements are not made for the temporary storage and transshipment of waste materials, not to mention the reception points for hazardous waste which the law requires. The latter are very rarely found in the municipalities.

The provincial governments, which according to law are responsible for managing and supervising the handling of waste, act just as slowly in respect to this matter. They excuse their inefficiency on the grounds of a shortage of manpower, which is indeed part of the reason why. The Ministry of Interior, which is the top echelon for the management and supervision of the handling of waste, on the other hand, looks down from above, waits to see what the municipalities and provincial governments will do and praises the excellence of the waste handling law.

There is, however, a gap in the law. There is no followup procedure in it by means of which national officials may obtain information on the municipalities' handling of waste. The law does not even make it mandatory for municipalities to report on their plans. The provincial governments could, to be sure, request information from the municipalities but they have not demonstrated any active participation either.

While municipal self-government is indeed to be defended and respected, in this matter some sort of obligation on the part of the municipalities to make their measures more effective would obviously be appropriate. This need not by any means nor should it be allowed to interfere with their self-government. Or will this poison scandal otherwise arouse the municipalities to take sufficient action? Businesses and property owners may, of course, also in part be accused — just as public authorities have been — of failing to apply the waste handling law, since they have not actively enough presented their plans for arranging for the handling of waste.

The main reason is, however, that no one really knows anything about how to do so.

Problems for the municipalities in the business of taking care of waste are, of course, in part the lack of manpower and insufficient expertise. Both can probably be resolved and the existing manpower can be used in other ways than it now is.

The same applies to many national administration departments whose duties have diminished in number or which could gain a great deal from reorganization. An Environment Ministry plan, on the basis of which scattered resources can be concentrated and the handling of tasks made more effective, is also aimed at this.

Thinking of the plan for a hazardous waste institute, the poison scandal has given us a clearcut lesson as to the right foot with which to start out. It indicates the direction we will drift in if the institute is not quickly gotten into operation. The government will have to in every way speed things up and help establish a hazardous waste institute rather than continuing to think up all sorts of excuses for putting it off.

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WORK STARTING ON COUNTRY'S HAZARDOUS WASTE PROCESSING FACILITY

Helsinki HELSINGIN SANOMAT in Finnish 29 Jun 82 p 6

[Article: Work on Hazardous Waste Treatment Plant Beginning in July"]

[Text] Hyvinkaa--The construction of a hazardous waste treatment plant in Riihimäki will begin in the middle of July even though it is not yet known how a funding deficit of 50 million markkas will be made up.

The funding deficit came about when the government agreed last week to provide the company with only 45 million markkas in assistance and other subsidies. The company requested 90 million markkas from the state.

The government assumed that the waste treatment plant would have to be reduced or 50 million markkas' worth of investments would have to be transferred. A special corporate meeting of the Suomen Ongelmajäte Corporation approved an investment and funding plan and left the government with the responsibility of finding places in which to economize.

'Savings by Means of Competitive Contracts'

According to Managing Director Folke Aarnio it would be impossible to change plans in a few days. "The government is now considering whether transfers can be made. On the other hand, the cost estimate of the project has been compiled by the planners and savings could be obtained, for example, by competitive bids."

The nationwide plant to be built in Riihimäki for the purpose of treating poisons and other waste products that are difficult to dispose of will cost 315.5 million; including interest payments and start-up costs, expenditures will increase to 486 million by the end of 1986. The waste treatment company is owned by the state, local governments, and industry.

The City of Riihimäki has sold the company a lot, but it still does not have a building permit or a waste treatment permit, which it will need before the plant can be put into operation.

Differences of Opinion on Priority of Permits

The plan for the hazardous waste treatment plant has been contested all the way to the highest court of administration. The issue is yet to be resolved.

There are differing views on the "order of importance" regarding the building permit and the permit to treat waste. Some consider that the building permit should be issued before the provincial government issues a waste treatment permit to the plant, which contains stipulations concerning the kind of plant that should be built.

According to Assistant City Manager Ensi R. Louhiluoto in Riihimäki they are of the opinion that a building permit cannot be denied. "We are only issuing a permit to build the walls, others will determine what can be done inside them."

According to Louhiluoto the city can make a decision on the building permit even if the highest administrative court has not yet ruled on the complaint.

Work Will Begin With Property Permit

The company intends to begin work on the lot with the so-called property permit, which gives it the right to accomplish the necessary earthmoving operations. According to Managing Director Folke Aarnio it is important that the company be able to accomplish this work during the summer so that several million markkas can be saved.

The City of Riihimäki has received the statements it requested for granting the property ownership permit and the permit will be issued next week. The board of directors of the waste treatment company decided on Monday that work would begin immediately when the permit is received.

Earthmoving operations will cost approximately 10 million. In the fall the company will decide on ordering a fuel plant. It will cost approximately 120 million markkas together with the reservoir and buildings.

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COMMUNIST ORGAN CHARGES LAWS INADEQUATE ON AIR POLLUTION

Helsinki KANSAN UUTISET in Finnish 1 Jul 82 p 6

[Article by Oili Alm: "Our Sulphur Discharges Are the Biggest in Europe Per Person"]

[Text] Air protection is still in its infancy in Finland. Industry has for a long time failed to do anything with regard to the content of the air protection law. Medical Board recommendations on the maximum allowable concentration of pollutants are cautious even in comparison with international standards. And their supervision depends on industry's own reports. As for industry, it is able to conceal the results of harmful research.

The problem as a whole is underrated and this is easy to do because air pollution relatively rarely produces direct symptoms in human beings. Nature reacts to pollution more rapidly and that further affects people. Fish are disappearing from the clear waters of the North's rivers and lakes and different kinds of allergies are becoming common. Are economic concerns more important than health concerns?

In Finland the most significant air pollutant is sulphur dioxide. About 60,000 tons of it a year are released into the air. A good 60 percent of that volume comes from industrial discharges.

Sulphur dioxide and minute particles cause enervation of the bronchial cilia, excessive growth of the pituitary gland and copious mucous secretion. The result is coughing and a decrease in the ability to resist infections. In the United States a direct connection has been shown to exist between pollutant content and bronchial infections in children.

In Finland occasional days, weeks, even months go by without periods of pollution, generally in winter, and these pose a problem. Local concentrations may rise to very high levels. Then healthy people too, not to mention those who are chronically ill and asthma sufferers, are in danger.

Filtering Would Help

Hydrogen sulphide and mercaptans are particularly evil-smelling and poisonous gases which are produced in the paper and petrochemical industries, ore

processing and the treatment of waste water, among other processes. In addition to being disturbed by the smell, people living in the neighborhood of lumber mills, for example, at Valkeakoski and in Oulu, suffer from headaches, poor health, infection of the cheek hollows and conjunctivitis.

"Too often we try to get rid of the pollution problem by erecting high smokestacks at plants in order to 'democratically' distribute pollutants. As for new plants, pollutants could be eliminated with filters and the process would not essentially increase construction costs. Aside from the fact that economic reasons must not be allowed to interfere with people's health," researcher Antti J. Hakkinen commented.

Although the effects of air pollution on people's health can only be directly shown as far as risk groups are concerned, Hakkinen is of the opinion that the "risk" that potentially dangerous pollutants are eliminated if only there is a possibility of doing so must be taken.

When speaking of air pollution in Finland, the fact is often pointed to that our country is tied to international trade and we cannot make decisions that deviate from those of other countries. Moreover, such people say that much of the pollution reaches Finland over long distances from Central Europe.

In the opinion of researcher Antti J. Hakkinen, Finland's role should involve being noticeably more active in striving to obtain international agreements on air pollution. Finland's recommendations on pollutant concentrations are noticeably higher than in the Soviet Union, for example.

Acid Rain from Europe

About half of Finland's sulphur volume stems from long-distance propagation. Finland still "enriches" other countries with its own discharges. The reason for Scandinavia's acid rain is chiefly held to be the fossil fuels used in the industrialized areas of Europe.

When fossil fuels, that is, coal or oil, are burned, sulphur, which forms acid compounds in the air, is produced. These sulphur compounds are eliminated from the air in two ways. By dry precipitation we mean the precipitation of particles while gaseous sulphur dioxides remain on the exposed surfaces. By wet precipitation we generally mean acid rain.

They have not yet been able to demonstrate the effect of acid rain on tree growth because the effect is fairly slow. On the other hand, the effects it has on waterways are provable. Among others, the rivers that run through the seven southernmost Norwegian municipalities, in which salmon used to be found, had lost practically their entire salmon population by 1970 and it has been confirmed that other fish are rapidly diminishing in number in those waters.

In Sweden it is estimated that the fish population in 20,000 lakes has been wiped out or is in a danger zone. When the acidity level of the water rises, fish fail to spawn and even adult fish may die because the fish's ability to regulate the transfer of dissolved materials to the gills is weakened.

In cold areas air pollutants in winter accumulate in the snow, whence they are released when the snow melts. In this way soil and water acidity may suddenly increase.

In Finland the effects of acid rain on nature have been very little studied. These studies, however, already demonstrate that their significance is obvious.

A large number of lakes have been found in Finland whose acidity levels have ominously risen. Valuable fish and crayfish have disappeared or are disappearing from our lakes. Researchers stress the fact that sprinkling the lakes with lime is no solution to the problem either since that, on the other hand, might cause rank vegetation. The only real possibility is to cut down on sulphur discharges and the volume of acid.

"The use of natural gas as a source of energy is locally a good solution as far as sulphur dioxide is concerned. If the gas pipeline was brought into Helsinki, we could noticeably clean the air," researcher Hakkinen maintained.

Lead Is a Pure Poison

Aside from industry, traffic is a significant polluter in the cities. Carbon monoxide, nitrogen oxides and carcinogens, or cancer-causing substances, and lead get into the air via exhaust gases. Pollutants produced by traffic chiefly affect people who already suffer from certain heart and respiratory diseases.

When children's playgrounds are located on streets with heavy traffic, these poisons may also seriously affect healthy children.

"Lead is a pure poison in the sense that human beings cannot use it for anything. Through the air lead passes into dust and snow, in which case children may swallow it in large amounts. Lead that is suddenly absorbed causes stomach pains, for example," neurologist Raimo Sulkava said.

Serious studies on the long-term effects of lead on the decline in children's performance level have not been made in Finland. On the other hand, several studies have been made abroad and there is reason to suppose that the results of these studies are applicable in Finland too.

Lead is a central nervous system poison that affects the brain. According to a U.S. study, it is harder to teach children whose teeth have a high concentration of lead to speak and their power of observation is less than is the case with those whose teeth contain less lead.

"In a study recently made in West Germany, it was shown that lowering the concentration of lead in gasoline significantly affected the lead content in the blood of people living alongside main roads. As a result of this alone, the lead content dropped to half of what it was. Completely lead-free gasoline is already on sale in the United States. And in Sweden they plan to switch entirely to unleaded gasoline by 1985. I see no reason why it would not be possible to do the same thing in Finland," Sulkava felt.

Law Is a Poor One

The new air protection law goes into effect in October. They have been hemming and hawing over it some 7 years now. And the result is nearly nil. Its greatest shortcoming is poor control over discharges of industrial plant pollutants. The local board of health or corresponding municipal officials are responsible for supervision, but this is based on the industrial plants' own reports. And ordinary citizens will not be allowed to interfere in matters concerning discharges either.

"The new law will not bring to our country systematic air protection. It does not even guarantee publication of the results of research. Nor have the latest recommendations on pollutant concentrations been decided on yet. We may assume that Medical Board recommendations are acceptable to industry. In Finland, however, we should consider the results of studies on the effects [of pollutants] that have been made abroad and the health of risk groups must be particularly ensured," Antti J. Hakkinen commented.

According to Hakkinen, money invested in air protection will be returned in terms of savings in national health efforts. According to him, the best thing about the air protection law is that it will make possible systematic research, assuming that sufficient funds are appropriated for that purpose.

And lastly Hakkinen puts his faith in group activity on behalf of clean air by the people who live in districts affected by polluting plants. As for Sulkava, he pointed out that occurrences of different kinds of allergies have tripled in just a few years time in Finland. This situation cannot be explained in any other way but as being due to the fact that more and more people live in the cities where pollutant concentrations are harmful to their health.

11,466

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AERIAL SPRAYING OF FORESTS RESUMES AFTER TWO YEAR SUSPENSION

Helsinki HELSINGIN SANOMAT in Finnish 22 Jun 82 p 25

[Article by Jyrki Iivonen: "Underbrush War To Begin in August"]

[Text] Ardent environmentalists will once again have an opportunity in August to acquire good experience in public demonstrations since after a 2-year pause the aerial spraying of underbrush will be resumed. It is expected that there will be lively encounters, in which the skin of the environmentalists will be tanned with MCPA and 2,4 D-solutions.

The wood processors will now stand firm behind their immemorial right to spray. Retreating could now result in new, more expensive prohibitions on forest improvements.

It is calculated that approximately 380,000 hectares must be sprayed annually for the care and maintenance of seedlings. Two-thirds of this area will be sprayed mechanically. The surface area to be sprayed from the air is estimated to be approximately 30,000 hectares, which corresponds to an area approximately the size of the City of Espoo.

The area to be covered by aerial spraying this summer will be significantly smaller than the original goal, a full 6,000 hectares. Of this amount the proportion of privately owned forests is one-fifth and 80 percent belongs to corporations.

Even this year the ministry sent a similar appeal to the forest industry, the central forestry boards, and the Forestry Administration, but it received a response only in the Forestry Administration.

Local municipalities and governments have petitioned for a prohibition on aerial spraying over an area of approximately 2,500 hectares, but the majority of the petitions were denied because the arguments were not specific.

Public Opinion Negative

In the discussion on underbrush the forest industry has come out the loser. It has not been able to answer local governments, fanatic biologists, and the old women in Hattuvaara, whose cries of distress have turned so-called public opinion against aerial spraying.

For the forthcoming struggle the forest industry has assembled an arsenal of arguments, by which it can demonstrate that chemical herbicides are safe and above all economical.

In preventing the growth of underbrush aerial spraying is without a doubt the safest and least expensive procedure. Clearing a hectare of underbrush with a clearing saw costs at least 400 markkas and the operation must be done at least twice. With aerial spraying an area of seedlings is covered with one spraying, and the cost per hectare does not exceed 300 markkas.

A Small Area

Foresters for the forest industry emphasize that the area to be sprayed is small. However, they do not intend to give up since otherwise the generally inaccessible area would not be sprayed at all.

It is also a question of principle. If they give in now, the next prohibition may cost the forest people even more.

Safety Guaranteed

Those supporting aerial spraying have provided assurances that the chemical solutions are not dangerous to humans. They disperse in a few weeks under natural conditions.

For the purpose of demonstrating the safety of the solutions a certain forester in the Tehdaspuu Corporation went so far as to drink a glass half full of the solution. Later the poor fellow was placed on a disability pension -- indeed for completely different reasons.

If words are not effective, then those protecting the interests of industry will generously show areas where chemical herbicides have succeeded just as in the illustrated pamphlets.

Pine seedlings stand upright like tin soldiers on Enso-Gutzeit's property in the parishes of Suonenjoki and Leppavirta. Only here and there does one see a withered alder. Such good results were achieved for the reason that a few years ago no objections were made to aerial spraying. Next to the clearings belonging to Tehdaspuu, alders, poplars, and birch grow unimpeded on the property of the Hackman Corporation. Now clearing work is accomplished only by hand with a clearing saw.

Opposition Is Surprising

The fuss being raised by the environmentalists seems incomprehensible to the foresters. Is it necessary to pick mushrooms in just those areas which have been treated with chemical herbicides? Are not untreated areas sufficient since in any event nine out of ten blackberries rot in the woods anyway? Why are there no objections to spraying from a tractor even though with this procedure the herbicides descend from approximately the same height as from an aircraft?

Industry naturally regrets the fact that the spraying must be accomplished during the best berry season in August. However, there are no other opportunities. If the herbicides are sprayed earlier, then evergreen seedlings would also die. If operations are postponed until later, then the substances would no longer have any effect on deciduous trees.

"We Are Talking About Poisons"

Professor Pekka Nuorteva, chairman of Helsinki University Environmental Protection Institute, points out that the discussion on underbrush is also an information war. "Industry is talking about herbicides and the protection of plants, we are using the word poison since they are poisons," he notes.

According to Nuorteva the goal of the environmentalists is to prevent the use of all poisons in forestry. Then industries would have to clear the underbrush around seedlings mechanically, which is exceptionally expensive. This, on the other hand, would change logging procedures since in extensive logging areas underbrush is the worst obstacle to logging operations.

Nuorteva has serious doubts about the harmlessness of present herbicides. "The 2,4,5 T used in Vietnam was supposed to disintegrate in 3 weeks, but residue could be found even after a year. Substances are always assumed to be harmless until proven otherwise. This is an incorrect premise.

"In principle, mankind has failed if it must resort to poisons. In forestry we should not be building such a chain of measures in which poisons play an organic role," states Nuorteva.

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COUNTIES ASK CENTRAL GOVERNMENT TO HALT AERIAL SPRAYING

Helsinki UUSI SUOMI in Finnish 30 Jun 82 p 3

[Article: "Plans to Spray 6,000 Hectares of Underbrush from the Air; 24 Municipalities Petition for Ban on Spraying"]

[Text] Twenty-four municipalities, chiefly in Keski-Suomi and Ita-Suomi, have petitioned the Ministry of Agriculture and Forestry for a ban on aerial spraying of underbrush in their areas. The ministry will decide on the spraying of poisons in the near future.

The Finnish Environmental Protection Union does not consider it impossible for the situation to escalate to the point of open conflict in many districts because public opinion is vehemently against spraying of the underbrush in the provinces.

"Over 6,000 hectares are slated for aerial spraying and [the ministry] has been requested to ban the spraying of over 3,000 of them," forester Aulikki Kauppila of the Forestry Department of the Ministry of Agriculture and Forestry said.

The northernmost of the municipalities that have requested a ban on spraying are Utajärvi and Kajaani. Several of the municipalities, such as, for example, Vartsila, Polvijärvi, Heinavesi and Kannonkoski, are located in Ita-Suomi and Keski-Suomi.

"This year we plan to subject all told 50,000 hectares of timberland blazed for cutting to chemical spraying," Kauppila noted.

He remarked that there was no spraying last year and that the Forestry Ministry will not be spraying national forests at all this year either. Mainly the lumber companies want the forests to be sprayed and private contractors will do the job.

Specific Grounds Required

The underbrush will be sprayed on the basis of the herbicide law. According to the law now in effect, the Ministry of Agriculture and Forestry makes decisions on the banning and restricting of herbicide use at the request of the municipality.

The law has been in effect since 1978 and the ministry has often denied municipalities' petitions.

"The municipalities give their reasons for wanting aerial spraying to be banned. The municipalities often maintain that we have an agreement in principle. That is, however, not enough; there have to be specific grounds," Kauppila noted.

Information secretary Ismo Tuormaa of the Finnish Environmental Protection Union asserts that over the years opposition to underbrush spraying has come to a head, especially after the 1980 conflict in Hattuvaara near Ilomantsi.

Tuormaa emphasized that the Environmental Protection Union under no circumstances instigates conflicts.

"However, public opinion in the provinces is so strongly opposed to underbrush spraying that it would be no wonder if conflicts did arise," he added.

"The responsibility lies with the political decision-makers. Economically speaking, it is a question of marginal issues. Putting a stop to underbrush spraying will not bring down the forest economy," Tuormaa said.

Veikko Junttila, the assistant municipal secretary of Kajaani, said the the Kajaani Municipal Council had reached an agreement in principle last spring in which they asserted that brush clearing could be taken care of otherwise than using poisons without incurring unduly high economic burdens.

"How better could they argue in their petition anyway? In any event, the ministry would end up granting a permit to spray," he grinned.

"Berry picking constitutes a fair source of income for the local population and, every time they spray, the berry picking area is reduced," he said, but pointed out that there is no protest movement in sight.

The town of Heinavesi has petitioned for a rejection of plans to subject an area of about 160 hectares to aerial spraying. The last time the town petitioned for a ban on spraying was in 1980, but the petition did not succeed.

"In the petition they referred to the agreement in principle reached by the municipal council at the end of the 1970's, in which they opposed sprayings, appealing from the points of view of employment and of the danger of polluting an area in which livestock is raised," Heinavesi municipal secretary Hannu Raninen said.

"If the permit to spray is issued, health officials will observe the situation. Nothing else can be done," he said.

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FOREST, LUMBER INDUSTRIES HALTING AERIAL SPRAYING

Helsinki HELSINGIN SANOMAT in Finnish 9 Jul 82 p 8

[Article: "Aerial Spraying Allowed To Be Repeated; Lumber Industry Consents to Backing Peace While a Law Is Drafted"]

[Text] This summer the lumber industry, the private forest economy and the Forestry Ministry will not combat the underbrush with aerial spraying. The matter was decided on Thursday during discussions led by Ministry of Agriculture and Forestry Taisto Tahkamaa.

The committee, which considered the economic importance of spraying, had already in early spring recommended that aerial spraying be halted, but the reaching of a decision stretched out for a long time due to lumber industry opposition.

This year they had planned to subject an area of about 6,000 hectares, about 5,000 of which belong to lumber companies, to aerial spraying. The areas to be sprayed are chiefly located in Pohjois-Karjala, Pohjois-Savo and Kainuu.

The sprayings are still subject to consideration by the municipalities. However, 27 of the 50 municipalities in the areas to be sprayed have already requested the Ministry of Agriculture and Forestry to ban aerial spraying of the underbrush.

The Ministry of Agriculture and Forestry has no information on the remaining municipalities because they do not have to report their granting of permission to spray to the ministry. According to department head Tapio Korpela, the ministry will next go about determining how many municipalities have consented to aerial spraying. The Lumber Industry Association, the Forestry Ministry and central forestry boards, to which most of the forests belong, will not, however, engage in aerial spraying.

The lumber industry and forest owners said that they had reached a decision to grant the ministry a period of peace for it to draft a new herbicide law. According to them, an atmosphere must be created in which a law can be drafted without emotional discussion about the environment.

Lumber Industry Association director Yrjo Hassi in particular demanded a businesslike approach to discussions. He accused the University of Helsinki Environmental Protection Institute, and especially its chairman, Prof Pekka Nuorteva, of showing a lack of objectivity in its distribution of information. According to Hassi, public opinion has for no reason at all been turned against underbrush herbicides. "It's strange that herbicides change into poisons when they are sprayed from an airplane," Hassi said.

New Law in Perhaps a Year

No one wants to start a new brush war over a few thousand hectares. A couple of years ago a group of environmental protectionists opposed the Forestry Ministry's taking a stand on aerial sprayings in areas to be sprayed. The matter was later thrashed out in court. This year the Finnish Environmental Protection Union has, among other things, predicted open conflicts if aerial spraying is again carried out.

A new herbicide law, under which municipalities would be given more power of decision, is now being drafted by the Ministry of Agriculture and Forestry. They are striving to get the new law into effect as early as late summer when next year's sprayings are planned.

According to the present law, at the request of the municipality the ministry may ban or restrict aerial spraying if the underbrush can be destroyed at a reasonable cost by other means or a restriction is otherwise advantageous from the standpoint of environmental protection and the local population.

Under a new law, the use of herbicides would be more of a local matter, even though the decision would still be submitted to the Ministry of Agriculture and Forestry for approval.

In the opinion of the Ministry of Agriculture and Forestry, aerial spraying is a necessary technique in caring for the more difficult areas planted with sapling forests. The ministry feels that, if it is abandoned, opportunities for berry picking and mushroom gathering will not increase, nor will they be able to significantly create new jobs either.

According to the lumber industry, annual losses in growth yield would amount to millions of cubic meters if spraying is completely abandoned.

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REPORT URGES SUBMITTING ALL CHEMICALS TO TEST BEFORE USE

Helsinki HELSINGIN SANOMAT in Finnish 2 Jul 82 p 11

[Article: "Product Control Committee Tightens Supervision: Report Must Be Made on New Chemicals"]

[Text] In the report it has submitted, the Product Control Committee proposes that reports on new chemicals should be submitted to the Medical Board before these substances are made available for use.

The committee proposes a stricter chemical law instead of the present poison law, one which would cover all chemicals and international regulations, their prior inspection and prevention of their detrimental effects on the environment.

The committee, which is headed by Government Councillor Risto Jaakkola, also proposes that the Council of State endorse the list of substances that are dangerous for the environment. A list of chemicals dangerous to people's health should also be kept.

The Council of State could ban or restrict the sale, use, manufacture and importing of chemicals dangerous to the environment and people's health.

Obligation to Report on New Substances

The importer or domestic manufacturer of a new chemical would always have to submit a report on the product to the Medical Board. The chemical could not be made available for use until 45 days after submission of the report. Chemicals which were not sold, manufactured or used prior to 18 September 1981 would be considered to be new chemicals.

The report would have to include information on the manufacturer or importer, the composition of the product, its identification and effects, among other things, as well as on studies made to eliminate the latter. This research would have to be conducted by the manufacturer or importer of the product. Already-available test results that have been proven to be reliable would also meet this requirement.

Official inspectors would have to check on those laboratories in which the products are subjected to testing. The committee estimated that from 60 to 80

such substances, which would require testing, are annually made available for use in Finland. The cost of research varies from 70,000 to 400,000 marks.

Approval for Products for the Protection of Trees

According to the proposal, biologically active chemicals intended for the protection of trees, the finishing of textiles, the saturation of paper and the inhibition of mold could not be introduced for use without the approval of a technical air control institute.

The permission of the control institute would be required for the manufacture of chemicals that are dangerous to people's health and the environment. The handling and extensive storage of industrial chemicals would have to be reported to the institute. Accident reports on serious accidents occurring in connection with the handling of dangerous substances would also have to be submitted to the control institute.

New Classification

In the committee's proposal, poisons are reclassified. Instead of first and second-class poisons, poisons would be divided into extremely poisonous, poisonous and substances harmful to people's health. The classification is modeled after the one used in Europe.

The committee estimates that from about 60,000 to 80,000 chemicals are in use in Finland. It proposes that a provision governing the different chemical registers be added to the law, whereby data would be collected in conformity with the requirements of the job safety law, the safe use notification system and the chemical law via the system for reporting.

The most comprehensive registers are now to be found with the Job Safety Commission and at the HYKS [expansion unknown] Poison Center, in each of which there is information on about 20,000 chemicals.

The committee proposes that the control system conforming to job safety laws be supplemented so that a so-called chemical report on products would have to be submitted to the Medical Board. This mandatory report would affect chemicals other than those used on the job which are dangerous to people's health or the environment as well.

Along with the new law we might also reexamine permits that have been granted earlier for special reasons.

Among other things, drugs, food, fertilizers, explosives and the transportation of chemicals, which would continue to be regulated by special laws, would not be covered by the new chemical law.

Discharges and their harmful effects would also be regulated on the basis of special laws such as, for example, the water and waste-handling laws.

Differing Opinions

There are three differing opinions in the committee report. Jointly, the members of the committee are of the opinion that the Interior Ministry be proposed to oversee the application of the new law and they urge that supervision be transferred to a new chemical control bureau which would be established within the Ministry of Environment.

Representatives of industry on the committee feel that the proposals are too strict and view them as endangering industry's ability to compete. The workers, on the contrary, would like to see even stricter regulations and control go into effect.

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STUDY OF AIR POLLUTION DURING 1970'S ANALYZES 'ACID RAIN'

Helsinki HUFVUDSTADSBLADET in Swedish 5 Jun 82 p 9

[Article by I. L.]

[Text] A study of the air in Finland during the 1970's was presented yesterday at the Meteorological Institute. It shows that on a year-round basis, the air is quite good. But daily measurements reveal large variations in air pollutants. A brief but intense period of acid precipitation can disturb an ecosystem that has already reached a critical stage. It is important to be attentive to such local peaks.

Incidentally, all the rain that falls in Finland is now acidic, even in Kevo up in the far north. And mercury pollution is even in the air over the sea.

Studies of the air will become the second most important task for meteorologists when the new clean air law goes into effect this fall. The study just completed is expected to provide an important statistical basis for work in the future. Antti Kulmala, Ph. D., who headed that study, is himself a meteorologist. At his disposal is a staff of coworkers representing several different branches of science: graduate engineer Alec Estlander, statistician Liisa Leinonen, chemist Tuija Ruoho-Airola, and mathematician Tapani Saynatkari. To a large extent, they designed their own measuring instruments under Estlander's leadership. They were even able to export one apparatus.

The overall picture of air in Finland is not bad--it is about the same as that in Sweden and Norway and better than that on the continent. But it is important to observe local and short-term variations, and Dr Kulmala points out that they can be picked up only by monitoring the air continuously.

Even if they do not show up in long-term statistics, they can have devastating effects locally.

All Precipitation Is Acidic

There is no longer any "neutral" precipitation in Finland. Rain and snow are acidic and have an acidifying effect on the soil and the lakes. The low pH values from the early 1970's remained low through the end of the decade.

Gases and suspended particles were studied. Roughly speaking, the poisonous gases in the air consist of two-thirds sulfur dioxide and one-third hydrogen compounds. Sulfur dioxide is usually singled out as the chief villain, but the researchers say that they have been taking an increasing interest in hydrogen compounds.

The mean values for sulfur dioxide in Finland's air are as follows: 2 to 4 micrograms in Kevo; 10 to 15 in Jokioinen; 45 in Helsinki; 50 to 60 in Espoo (the measuring station is in Kilo); and 50 to 70 in Tampere. The risk to health is said to begin at 70 mg [measurements here and below as published].

The air in Tampere provides proof that by using district heating, smoke filters, and purifying measures, it is possible to reduce the sulfur dioxide level. In the early 1970's, the air in Tampere contained 100 mg of sulfur dioxide. Now it is down to or below the health risk threshold even at its worst.

The greatest concentration of mercury pollutants in the air was found, as expected, at the measuring station in Jokioinen, which is located in a typical agricultural district, but they could also be recorded on Sjal Island and in Kokar. Mercury exists even in the sea air.

Exports and Imports of Dirt

As is known, air pollutants are carried to Finland from the continent by air masses. But it is also important to remember that we ourselves export half of our own output, according to the researchers.

We ourselves are responsible for most of the pollution in the air. Imported dirt dominates only in the precipitation.

The air pollutants were studied at 11 so-called background stations. None of them, therefore, is located in the heart of a large residential or industrial center, but rather at some distance away. The Meteorological Institute's future plans call for studying the air in densely populated areas and preparing the relevant statistics. That would help the cities in their own air quality control and provide a basis for local clean air measures.

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LEAD, OTHER POLLUTANTS EXCEED NORMAL RANGE IN HELSINKI

Helsinki HELSINGIN SANOMAT in Finnish 17 Jun 82 p 9

[Article: "Pollutants Exceed Standards in Helsinki Center"]

[Text] Air pollutants caused by traffic on many streets in the center of Helsinki are greater than the recommended amounts considered suitable for human respiration by the Central Medical Board.

The Institute of Air Science has been studying air pollution caused by traffic for a couple years in eight locations for measuring air pollution in the area of the capital city. According to the results published on Wednesday traffic is the most significant source of air pollution on busy streets and poorly ventilated streets in the center of Helsinki.

The amounts of carbon monoxide measured on Frederik Street, Alexis Kivi Street, and Lonnrot Street were nearly equal to or even exceeded the amounts allowed by the Central Medical Board. At the Helsinki Street location the amount of carbon monoxide measured was already perceptibly less.

The Central Medical Board has recommended hourly values of 500 micrograms per cubic meter of air for nitrous oxides. On Lonnrot Street this amount was exceeded perceptibly. On Helsinki Street the amounts of nitrous oxide encountered during the winter were almost that of the recommended level. The amounts on Asema Road in Vantaa and Merituuli Road in Espoo were already half of the recommended amounts.

200 Kilos of Lead Per Day

Lead emitted into the air of the capital city almost completely originates from traffic, states the study. On a weekday 200 kilos of lead are emitted into the air.

In Japan the permissible level of lead is 1.5 micrograms per cubic meter of air per day. At the Lonnrot Street location the highest daily levels clearly exceeded the levels permitted in Japan.

According to the study lead is usually emitted as small particles, which can easily penetrate deep into the respiratory system. On streets with heavy

traffic the air also contains larger lead particles, which have mixed with dust stirred up from the surface of the street.

In the study it is estimated that 90--95 percent of carbon monoxide emissions are traffic related. More than half of the nitrous oxides and hydrocarbons is caused by traffic.

A gas-operated motor vehicle emits more than 10 times as much carbon monoxide into the air as a diesel-operated vehicle. Also the amount of nitrous oxides and hydrocarbons emitted by gas-operated vehicles is approximately double that of a diesel-operated vehicle. The particle-like emissions from the exhaust gases of gas-operated motor vehicles contain lead while, on the other hand, the exhaust emissions from diesel-operated vehicles contain many more polycyclic aromatic hydrocarbons, which have been confirmed to be carcinogenic.

Researchers Raimo Kartastanpaa and Eino Lumme of the Institute of Air Science, who conducted the study, point out the importance of winds and other weather conditions in the fluctuation of traffic-related air pollution. The amounts of pollutants fluctuate perceptibly according to the winds. In addition, seasons are important. In the spring, in particular, there is an exceptionally large amount of dust from traffic in the air around Helsinki.

Butterflies No Longer Becoming Darker

Overall air pollution has not increased in the metropolitan area of Helsinki since the middle of the 1970's. This conclusion has been reached by researchers studying butterflies at the University of Helsinki.

A study accomplished by a group under the direction of Docent Kauri Mikkola was also published on Wednesday. It has been confirmed that certain species of butterflies are excellent barometers of air pollution. As pollution increases, traditionally dark butterflies increase and lighter ones decrease. A similar report was made a full 5 years ago.

According to the new butterfly study pollution is no longer increasing in Helsinki, rather it has even decreased as the result of remote district heating, estimated Mikkola. However, butterflies have disclosed a new smaller area of pollution in the Suomenoja area of Espoo. This pollution has been caused by the Suomenoja Power Plant, which has been in operation for 5 years.

Calculated on the basis of the color of butterflies the area of pollution in the center of Helsinki extends from the northeast sections of Lauttasaari and from Lapinlahti to the neighborhoods of Vanhankaupunginlahti. All of Helsinki's largest power plants in Salmisaari, Hanasaari, and the waste treatment plant in Kylasaari are located in this area.

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PAPER URGES LAW TO CONTROL LEAD FROM EXHAUSTS

Helsinki HELSINGIN SANOMAT in Finnish 19 Jun 82 p 2

[Editorial: "Lead Content of Gasoline Should Be Reduced"]

[Text] Air pollution has become a troublesome problem for large cities as well as other more extensive areas also. Attention has been fixed on the exhaust fumes of motor vehicles, which contain substances detrimental to people. For example, lead emitted into the air in urban areas originates according to studies almost entirely from the burning of gas.

Not as much serious attention has been given to the detrimental effects of exhaust gas in Finland as in many other countries. The reason has simply been the relatively small number of motor vehicles. Now, however, the Institute of Air Science has determined lead contents in the air around the capital city and has observed that in some locations the amount of lead exceeds the recommended levels considered suitable for human respiration by the Central Medical Board. Thus in the Helsinki area there is more pollution than there should be from the point of view of human health.

Indeed, the result of the study is no surprise. The danger of lead caused by exhaust fumes has been studied before and on the basis of this study guidelines have been issued for the cultivation of food crops in the vicinity of busy highways. Also on the basis of this same study a clarification is being made of the risk of lead poisoning in children's parks in the capital city.

In the worst case lead can cause poisoning, but it is also known that it can be detrimental to the human central nervous system. According to a certain study an accumulation of lead in the organism, on the other hand, can have a detrimental effect on the intellectual development of children. It is remarkable that all the detrimental effects of lead are not even yet known.

Since a definite lead hazard does exist, it is astonishing that stipulations concerning the maximum levels of lead content in gasoline have not been issued. The Finnish producer of gasoline, Neste Corporation, has, indeed, on its own initiative reduced the amounts of lead it uses. They now correspond to the average international level. In spite of this, they are perceptibly higher than the standard levels in certain large European countries.

For example, the lead content in gasoline produced by Neste is nearly three-fold that of the amount allowed in the Federal Republic of Germany. According to research there the restrictions on lead imposed 6 years ago have resulted in a reduction of lead content in the air to half of the previous amount. A corresponding maximum amount of lead in gasoline has been instituted in Sweden also and in certain other countries.

The reduction of lead content in gasoline in Finland has been brought before parliament several times. However, the results have been meager. The government's argument has been that reducing the content of lead in gasoline would increase Neste's expenditures and would thus be reflected in the price of gasoline. An even flimsier argument is that on the basis of the present study there is no reason in Finland to reduce lead content in gasoline at a faster rate than in Europe in general. Also Neste has announced that it does not intend to reduce the amount of lead before a more economical alternative to it can be found.

Thus the most important obstacle to reducing the amounts of lead in the air is money. Neste's production costs would increase by approximately 150 million markkas in a year if the amount of lead were to be reduced to the levels in other countries.

Since it is known that lead is harmful to human health and that it can be eliminated from gasoline without unreasonable expenditures, the implementation of restrictions seems to be incomprehensibly difficult.

The air protection law that will go into effect in the fall will provide an opportunity to limit the amount of lead in gasoline. The government should take measures to reduce air pollution and not just think about the interests of domestic oil refining, as what seems to have happened in the past. The air protection law was legislated for the reason that economic interests would not be given priority over human health.

In discussing the detrimental effects of exhaust gases it must be emphasized that lead is not the only danger lurking in the air. Fuels contain a significant amount of other compounds, the detrimental effects of which have been evaluated to be even greater than the risks caused by lead. The reduction of these compounds also must now be emphasized in accordance with the spirit of the air protection law.

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SERIOUS POLLUTION IN SARONIKOS GULF

Athens ELEVTHEROTYPIA in Greek 21 Jun 82 p 8

[Excerts] Industries of high pollution potential such as alcohol and liquor distilleries, paper mills, chemical industries, basic metals foundries, tanneries, slaughterhouses, hotels, hospitals, etc. dump into the Saronikos 559,000 cubic meters of refuse every day and the urban pollutants emptied by the Akrokeramos of Keratsini surpass the 500,000 cubic meters daily. They are generated permanently or periodically by 59 locations.

Measuremnts taken by the PERPA [Pollution Control Program of the Atehns Area] in 1976; 1977; 1978; 1979 for microbe indicators in only 73 areas, from Oropos up to Kalloni, which cover the shoreline of beaches of the Argosaronikos and the South Evoikos Gulf, have shown that the concentration of pollutants coincides with the over-concentration of industrial and urban activity. In the related study it is explained that the quality of the water is not only determined by the colobacteria [eserichia coli] and colobacteroids but also by other microbiological, natural, chemical and biological parameters which constitute the essential criterion for the evaluation of the degradation sequence.

Elevisis, Aspropyrgos, Mandra, Magoula. The Thiasion Plain, a plain free to industrial immunity. Cement plants, refinery, shipyards, brass foundries, etc. several hundreds of small and large factories poison the air, the soil the sea. The problem has become international and Elevisis has become famous the world over as the Greek Seveso [Italy]. Despite all this, the murder continues. Decisions made by the New Democracy are going to be implemented today. They are in the process, that is, of:

Establishing in Aspropyrgos the quarries, the tanneries, three dumps, the illuminating gas plant and the mineral oils plant of Vardinogiannis which will process and recycle used oils which are extremely dangerous. Regarding this plant, there was an inquiry in the Chamber of Deputies and the Ministry of Industry replied that, in that particular area the location of high pollution industry is permitted, therefore, the Vardinogiannis firm is given the opportunity to more than double the area of its installations. However, an on-the-spot survey using the map of the ministry as a guide, revealed that this installation is being located in an area where high pollution industries are not permitted. On the eve of the World Environmental Day, the mayor of Elevisis, Mr. Mikh. Levendis, emphasized at an all-popular rally and march towards the sea that:

The Kouramanis plant whose operation was halted by the Ministry of Industry can resume its operations. The decision can be overturned by the Council of State.

Two quarries are going to be located at Xirorema and Villiari despite the fact that recently the deputy minister of Industry, Mr. Pitsiotis, stated on television that quarries would be closed in Attiki.

The defense industry PYR-KAL proceeds with investments of hundreds of millions of drachmai despite the fact that the minister of defense has given assurances that its 550 stremma lot would be converted into a park.

The announcement of the results of the inquiry by WHO on the effects of pollution on children and pregnant women of the city has been delayed while reports claim that they are very disquieting and for this reason have not been released.

How does the Ministry of the Merchant Marine face the problem? What specific measures has it taken for the protection of the sea in view of the fact, moreover, that Minister Stathis Giotas has repeatedly shown that he is sympathetic to ecological matters?

We must note here, that, in contrast with the other ministries where we made specific inquiries, the YEN [Ministry of Merchant Marine] willingly and on time participated in our investigation. To the first question they answered that:

In the context of its responsibility it has given orders to the Port Authorities and monitors their compliance enforcement, has prepared and forwarded for publication to the National Printing Office, a ministerial decree with rules and prerequisites for the building of floating facilities for the collection of refuse from ships.

Regarding ships which spill oil, discharge slops from dirty ballast (tank cleaning) at sea and are illegally allowed into port, etc. the YEN states that, according with the port regulations in force, it is permissible in certain maritime areas for the loading and unloading of fuels. If this were not permitted, an impasse would be created, but the provisions of the law are applied with the same severity both to the vessels which load/unload liquid fuels and to the installations (refineries) which store and process petroleum products (Editor's Note: Perhaps this does not always happen. For example, a relative regulation allows a certain number of ships in the Gulf of Sousaki of Korinthia, but we have often seen with our own eyes that the regulation is violated). From all over the country come charges that ships which are laid up pollute the waters dangerously. How does YEN take care of this matter?

Its answer:

The laid up ships are the result of difficult economic coincidences which have hit the bulk transportation particularly hard. A significant number of ships which engage in this trade has been forced to inactivity and their remaining in this condition will depend on the course of the reversal of the slump of the international economy. The Greek merchant marine which consists of 93 percent of bulk carriers, is directly paying the consequences of this crisis and their being laid up is an unfortunate consequence.

"Our country, as a maritime nation which is conscious of the tremendous national and economic significance of its merchant marine, had to permit the laying up of ships which are immobilized. The anchorages of these ships have been designated in areas which insure safety, a short distance from inhabited areas for the safety of the watchmen of the ships and their provisioning, etc. It is not true that the laid up ships pollute the waters because they are exhaustively inspected both before the laying up and during the time this lasts in order to minimize the effects of provoked pollution.

Fines of 28 Million

What will the YEN do for the protection of Greek waters from pollution? What laws and decrees are in force today? The ministry's answer is as follows:

Steps have been taken with the Piraeus Port Authority so that it would install additional facilities for the collection of ship's refuse. A survey was made of the means and material of pollution cleanup at the disposal of the shoreline private installations and the proper use of them will be made part of the relative data in order to estimate their sufficiency. At the same time, a bill is being processed through the Chamber of Deputies for the ratification of the MARPOL International Agreement 73/78 "for the avoidance of marine pollution by ships," its enforcement which is estimated will improve significantly the quality of the marine environment because it covers all types of pollution by vessels, petroleum products, chemicals, etc. A bill for the ratification of the International Agreement (Fund 71) "for the institution of an international fund for the restoration of the damages by petroleum products" is also being processed.

In addition:

Bill 1969 is in the planning stage and about to be introduced for ratification "for the intervention in the open seas, in the event of threat of pollution by chemical substances. Relative to the protection of two areas particularly susceptible to pollution, Agion Theodoron and the Pagasitikos Gulf, the YEN says that there is being prepared for publication a presidential decree which provides for the establishment of regional stations for the fight against pollution within the port authorities of Isthmias and Volos.

The laws in force today are:

Legislative decree 4529/62 "on the prevention of marine pollution by petroleum." (Ed. Note: prevention is a mandatory need and, other effects aside, it saves us from financial losses because, according to the UN, the cleanup of one barrel of oil at sea costs one thousand dollars.)

Legislative decree 187/78 "on the Code of Public Maritime Law." Law 743/77 "on the protection of the marine environment and the regulation of related matters." Law 314/78 "on the ratification of the Brussels International Agreement." Law 855/78 "on the ratification of the Barcelona International Agreement." Law 1147/81 "on the ratification of the International Agreement of 1972 "on the prevention of pollution of the sea by dumping of refuse and other matter by vessels and aircraft." Sanitation decree Elb/22/65 "on the disposal of refuse of installations," and a number of ministerial decrees issued for the enforcement of the above.

The Ministry of Merchant Marine informs that, despite the preventive measures in force, there are instances of non-compliance and the violation of the legislative decrees. Therefore, both it and the port authorities are forced to apply repressive measures which consist of the imposition of sanctions against the culprits. The sanctions, according to the law are criminal, administrative and disciplinary. Thus:

During the period 1 Nov 81 to 13 May 82 the port authorities imposed fines for a total of 27,935,000 drachmai. In essence, 129 violations were ascribed to ships with fines totalling 9,465,000 drachmai and 61 violations by installations which dispose of their wastes in the sea with fines for a total of 18,470,000 drachmai being imposed.

9731

CSO: 5000/5333

GREECE

ANTI-POLLUTION MEASURES IN NORTHERN GREECE

Athens RIZOSPASTIS in Greek 20 Jun 82 p 2

[Text] During a conference which took place Friday at the village of Agios Pandeileimon of Florina Nome at the initiative of the Nome authorities, representatives of tens of mass organizations demanded radical measures for the protection of the lakes Bergotis and Petron from the continuing pollution of wastes dumped by industries in the area.

The speakers emphasized that there is continuing pollution of the two lakes with immediate consequences on their hydro-biological wealth.

The industries of fertilizers of Ptolemais "AEVAL" and the tannery which operate in Amyntaion were accused of being the fundamental causes and generators of pollution by the speakers and special scientists.

Participating in the conference were the governors of the Nomes of Florina, Mr. K. Kritsinis; of Pella, Mr. G. Adamopoulos, and of Kozani, Mr. Khalatsis. Also the professors of the Veterinary and Agri-Forestry School of the APTh [Salonica Aristoteleion University], Messrs. Kylikidis and Mouroukidis, municipal council chairmen, representatives of the TEE [Technical Chamber of Greece], and a representation of the Florina Nome Committee of the KKE headed by its secretary, Comrade Mitsos Khambidis.

In his speech, Comrade Khambidis emphasized among other things that the measures which must be taken by the government must be of a substantial nature and aim at curbing the immunity of the industries which destroy the environment. He added that the solution is not to be found in the continuous cooperation with the polluting industries, but in the constant struggle of mobilization by the inhabitants.

At the end of the conference a series of proposals was voted to:

Found an ecological institute in the area.

Force the industries to comply with the existing legislation and to build treatment installations or to improve the already existing ones.

Prohibit the operation of the "AEVAL."

GENERAL

GREECE

BRIEFS

KAVALA FIRM FINED--A fine of 1.3 million drachmai was imposed by the Port Corps of Kavala on the "Haliburton" Company because it polluted the sea waters with xylene. Xylene is used for petroleum drilling and the leak (four times) took place when the substance was being loaded at the port of Kavala for the "Votengo" floating rig. [Text] [Athens I KATHIMERINI in Greek 15 Jun 82 p 2] 9731

ELEVSIIS FIRM FINED--A fine of 300,000 drachmai was imposed by the Port Corps of Elefsis on the manager of the "Oinotrans" distillery for marine pollution by wastes. For the same reason a fine of 100,000 drachmai was imposed on the manager of the "Owens" glassworks. [Text] [Athens TO VIMA in Greek 15 Jun 82 p 8] 9731

OIL RIG POLLUTION--The organic and inorganic toxic substances "hit" by the floating rig "Dan Baron" at a depth of 3,000 meters in the waters near Katakolon are considered dangerous to living organisms. As was reported, the polluted area threatens, in addition to fish, the bathers in the neighboring areas. [Text] [Athens AKROPOLIS in Greek 18 Jun 82 p 8] 9731

PETROLEUM POLLUTION--Four oil slops of limited size were observed in the last three days in the marine areas of Kavourion, Lavrion, Kalamaki and at Kalous Limenes of Irakleion, Crete and were caused by various ships. The first two were spotted by aircraft and were reported to the Ministry of Merchant Marine by the control tower of the Ellinikon Airport, the third by a yacht and the last by the Central Port Authority of Irakleion. The pollution at Kalamaki was cleaned up by the special cleanup unit of the Piraeus Central Port Authority while at Kalous Limenes the cleanup was undertaken by the township of Pigadakia. The other two were dispersed by currents. The authorities, with the help of witnesses, are on the tract of the violators. [Text] [Athens TO VIMA in Greek 22 Jun 82 p 7] 9731

CSO: 5000/5333

FJORDS BEING SUBJECTED TO INCREASING POLLUTION

Oslo KLASSEKAMPEN in Norwegian 13 Jul 82 p 9

[Article by Heide Egede-Nissen: "Norwegian Fjords--Full of Filth"]

[Text] How great is the pollution of our fjords? And what is being done? To get an answer to this we must go to the National Pollution Inspection. They have several places in the country where over a long period of time they have conducted pollution surveys. The fact is that many Norwegian fjords and coastal areas are seriously polluted with environmental poisons. In several places it is recommended not to eat the fish or bathe because of health reasons.

The Norwegian fjords are some of the most characteristic features of our land. No other country can show such blue, deep and fantastic fjords as Norway. On postcards they look clean and fresh, but under the surface another reality exists. Unfortunately the pollution has become so great a problem for our fjords that several organisms and bottom areas are threatened. Although the emissions to a number of fjords have been reduced, the conditions are in no way satisfactory, according to the Pollution Inspection.

Rubbish Boxes

The fjords have many uses. Many are good for fishing, bathing, and other outdoor sports. And for many the fjords are the nearest approach to other sea areas. But they are also used as rubbish boxes for human activity. Both community and industrial sewage have for many years been dumped into the fjords--and are still being dumped!

What Are the Facts?

The fjords which have been hit by pollution of one kind or another can be named indiscriminately. The emissions from the lumber industry at Halden have destroyed Iddefjord's ecosystem. Because of the sewage emissions in the Oslofjord the lifegiving oxygen in the deep waters of the fjord is greatly reduced. In the entire Gandsfjord by Stavanger the intestinal

bacteria is so concentrated that people are advised not to swim there. The emissions from the gasworks at Sauda Smelteverk have caused the metal level in mussels and seaweed to be abnormally high.

Poison Fish

Beside the Saudafjord the situation in Grenlandfjord in Telemark is characterized as the most critical today. Most of the population lives in Skien and Porsgrunn, where most of the industry is concentrated. Norsk Hydro's magnesium factory on Heroya is the greatest source of environmental poisons. It has actually come so far that the health authorities advise people against fishing in Frierfjord. Concentrations of quicksilver have been found in the fish which were far over the limiting value for fish for consumption. And in spite of investigations and supervision of the fjords the emission of pollutants has not changed much in the past 2-3 years.

What Is Being Done?

The National Pollution Inspection has surveyed the critical areas for a number of years. Investigations and observations have been made regularly, and as results show, conditions require that several actions be taken. In the Oslofjord a new cleaning installation was opened a short time ago. Nearly all the sewage in the Oslofjord is now connected to different cleaning installations. But unfortunately only half of the sewage reaches the cleaning installations. In the Oslofjord it is estimated that the piping network is so bad that about 40 percent of the pollution leaks out and comes directly into the fjord.

At Skien and Porsgrunn a municipal cleaning installation will be built until 1986. That will contribute to an important reduction of pollution in the fjords.

Sneak Pollution

Today we know a lot about the substances which are environmental poisons. The most important environmental poisons are metals, chlorinated organic compounds, fluorine and PAH which is created with all incomplete combustion of organic material. But not all compounds are identified and characterized with reference to chemical construction and properties. The known compounds often make up only a part of the total contents. We can not therefore overlook the possibility that there is sneak pollution, a pollution we do not have control over because it is unknown to us.

Better, But Not Good Enough

It is the private firms which cause the most environmental pollution, according to the Pollution Inspection. What can be done to improve conditions?

At Sauda Smelteverk the firm erected a cleaning installation in 1977, said environmental engineer Bruborg from Sauda. "The loading was dominated by the gasworks, but now the cleaning effect is 95-98 percent, we are told. When the cleaning installation was purchased it cost 18 million kroner, but we had to have it in order to retain the concession which we had. With the cleaning installation we have no problems with meeting the concession requirement," said Bruborg. But even if the fish have become better, the metal concentration is still not low enough in comparison with the normal value, according to the National Pollution Inspection.

9287

CSO: 5000/2148

LIBERAL PARTY CHIEF ATTACKS GOVERNMENT POLLUTION EFFORT

Oslo DAGBLADET in Norwegian 14 Jul 82 p 2

[Article by Odd Einar Dorum, chairman of the Liberal Party: "Pause for Thought in Environmental Policy"]

[Text] We can now observe a number of worrisome signals that environmental policies will suffer from the Conservatives' tax promises. The most important examples are:

1. Measures to combat noise are being impeded. The most important measures against traffic noise are being postponed. This comes from the government's report to the Storting. This is happening in spite of strong directives drawn up by a unanimous Municipal and Environmental Protection Committee. On this point the government has neglected to follow up a unanimous Storting committee which has requested that fees be levied on noisy products in order to finance measures to fight noise. Such fees are levied in the Netherlands, but it can not happen in Norway. Here we push the problems ahead of us. Those who must pay are some of the most exposed groups in the big cities.

Chemical

2. The sitting government has contributed to further delay of regulations on chemical substances and products by one year because they could not follow up a unanimous Storting committee demand that Norway should put into effect its own measures in this area and not wait for EC measures. In the same area dealing with chemicals and poisons the government has pushed the problem of regulations sanctioning poisonous substances ahead of it, so that it is also postponed beyond the previously stated desires of the Storting.

Pollution

3. Pollution. On this point the government has proposed weakening the pollution law. The most important weakness is that the authorities will now abandon trying to draw up guidelines and norms for what shall be acceptable limits for emission of poisonous substances and products. Presumably that

can have a positive effect because it could enable authorities to draw up the main guidelines as they wish. But when that is compared with the lack of will to strengthen the staff of the department, and the Conservatives' handling of the environment department's budget in the past year, a cause for concern is detected. If this also continues in the coming year's budget, the weakening of the law and the absence of Conservative Party will to apply manpower and resources, this will lead to the environmental side suffering for the tax promises of the Conservative Party.

Precipitation

4. Acid rain. The same day that a cabinet member was quoted in the Norwegian newspapers with the encouraging statement that progress is now being made in the work against acid rain, there was an NTB [Norwegian Telegram Bureau] report from a Stockholm conference which indicated that little has been accomplished. It does not help environmental protection policies nor does it solve serious problems when central politicians try to place a fog bank over important political questions.

The examples I have mentioned indicate that environmental policies are also going to suffer for the Conservatives' tax promises. It is to be hoped that in the fall the Storting will reject such a line. We are confronting an issue which is decisive for all those living now and for coming generations, and we can not afford the type of policy which the Conservative Party is now planning.

9287

CSO: 5000/2148

SWEDEN

SALT FROM WELLS SEEN POSING THREAT TO ARCHIPELAGO WATERS

Stockholm SVENSKA DAGBLADET in Swedish 26 May 82 p 10

[Article by Margareta Sandstrom: "Salt in the Wells Threatens the Archipelago"]

[Text] Foul-smelling drinking water, salty coffee, gardens losing their green color. In the worst case, this is how the future may look for the people in the archipelago if they do not watch out.

The use of water is increasing steadily. Researchers' prognoses indicate that by 1990 the ground water supply may be overexploited, causing salt water to flow in.

The archipelago counties have suddenly awakened to the need to master the water problem, but they lack outlines and support in the legislature and want a survey of the water supply.

"We are seriously concerned and have issued warnings on all levels, almost all the way to the government," say the two ground water geologists Buster Sund and Goran Bergman of the Institute for Air and Water Research (IVL).

"One is now aware of the risks in all the archipelago counties. The surveillance has increased, but there is no support for action in the legislature. Every landowner is free to drill his own well."

Overdraft Dangerous

"Ground water is like money in the bank. One cannot withdraw more than one puts in," Goran Bergman explains. "Ground water does not lie in some inexhaustible reservoirs below ground level. Every spring and fall the reservoirs are filled."

"Normally, ground water pressure in the archipelago is higher than that of surrounding salt water. Thus fresh water can be produced even in the beach areas.

Serious Damages

But if one withdraws too much ground water the pressure is changed. A negative pressure suction is produced and salt water can pour into the ground water reserve. Such damage is almost impossible to correct.

"Before, when people were content to pump or carry water by hand, each household used 100 liters a day on the average. Today's electrical pumps have increased the daily per capita use of water dramatically to 150 liters. Statistically this means that each house withdraws as much water as flows into the ground, that is 400 liters a day."

"Besides permanent residences, use of vacation houses is becoming more frequent. By 1990 we project a withdrawal that is greater than supply," says Goran Bergman.

"We need a survey of the water supply," says the Varmdo County Board of Health director, Lennart Toresjo. "We have asked for funding, but not yet received any."

"Salt water has already penetrated into the wells on Vindo and now lately out on Tiströnskar. At the moment there is not much building. That gives us breathing space."

There are problems even in Norrtälje. "We do not know how large the water reserves are," says Lennart Persson of the Board of Health. "It is on principle a private matter, as long as the law is not changed. The water question is part of environmental planning, but we lack proper guidelines. Legally there is an inconsistency between civil law and county planning. We would like to see the water law revised."

Spreading

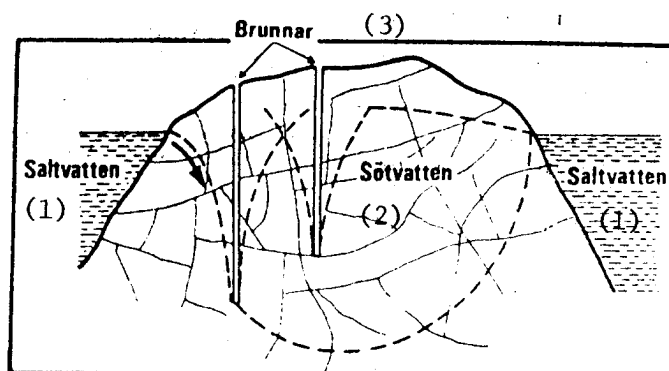
At the Swedish Geological Research Institute (SGU) in Uppsala the geologist Helgi Lindewald is rushing his data survey of "Salty Ground Water to Sweden."

"Since 1976 there has been a law that all well drilling in the country must be reported to the SGU. Yearly, it is a question of 8,000 wells. One percent--that is, 80 wells--are reported to produce salty ground water," says Helgi Lindewald.

"The amount of chloride in the ground water varies from region to region," Helgi Lindewald explains. "Usually the amount is between 10 and 60 milligrams per liter. If the amount passes 300 milligrams, the so-called taste limit, the ground water is considered salty."

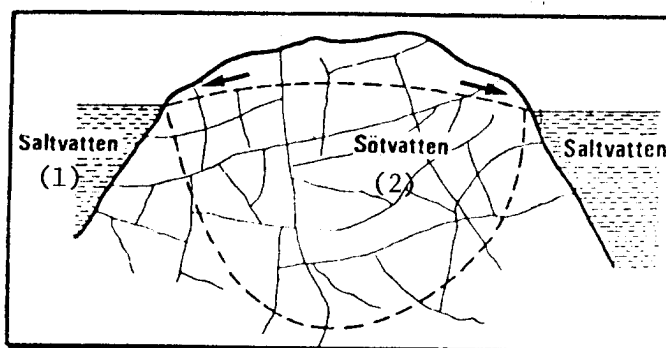
"The amount of chloride in the 780 wells which are included in the survey is between 300 and 7,000 milligrams per liter. The extent of salty ground water is larger than expected. Some very salty wells can have their sources in underground salt water lakes, left over from the ice age."

"It is very clear that the water in the archipelagos is changing from fresh to salty, probably due to excessive water use in the vacation areas," Helgi Lindewald cautions.



KEY: (1) Salt water
(2) Fresh water
(3) Wells

The fresh water level has dropped in a funnel-shaped manner around rock-drilled wells on an island surrounded by salt water. The funnels change the balance between fresh and salt water. It becomes possible for salt water to penetrate into the fresh water supply and mix with it. One liter of 2 percent salt water will make 7 liters of fresh water salty.



KEY: (1) Salt water
(2) Fresh water

Diagram of fresh water supply on an island surrounded by salt water. The cracks in the rock contain the water. The pressure of the fresh water is higher than that of the sea water; the ground water level slopes toward the sea level. This way sea water is prevented from mixing with fresh water. From the report "Salt Water Penetration in Rock-Drilled Wells."

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CSO: 5000/2124

END